



The Role of Psychological Sense of School Membership and Postcode as Predictors of Profiles of Socio-emotional Health in Primary School Children in England

Susana Castro-Kemp¹  · Olympia Palikara¹ · Carolina Gaona¹ · Vasiliki Eirinaki¹ · Michael J. Furlong²

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Abstract

A dual approach to mental health in schools has been widely defended, where the assessment of psychological distress and the examination of strengths/well-being are two separate continua. In line with a well-being approach, school belonging has been referenced as an important indicator of mental health in children. This study explored the predictive role of school sense of belonging alongside other demographic variables (gender, main language spoken at home, and socio-economic status of postcode) on the socio-emotional health profiles of primary school children in England. Children ($N=522$) were recruited from three primary schools in Greater London. A survey including measures of school belonging and socio-emotional health was administered to all children. Results showed that it is possible to identify groups of students at primary school level based on *socio-emotional health ratings on gratitude, zest, optimism, and perseverance*. School sense of membership, as measured by the psychological sense of school membership primary (PSSM-P), was the best predictor of group membership and, together with socio-economic status, explains 37% of the variance in socio-emotional health profiles. Belonging starts affecting well-being and socio-emotional health as early as in primary school, hence the importance of universal screening and early preventive actions to promote well-being in this age range. The study provides evidence supporting the use of the abbreviated (PSSM-P) in predicting socio-emotional health profiles, with potential to complement distress-based measures.

Keywords Psychological sense of school membership · Mental health · England · Primary · Screening · School belonging

Introduction

Cross-national studies suggest that approximately one in five children experiences some form of mental health difficulty, and that these are related to long-term outcomes such as poor academic attainment, substance abuse, and antisocial behaviour (Patel, Flisher, Hetrick, & McGorry, 2007). A review of studies on child and adolescent mental health in the twenty-first century has also suggested that this has been an increasing trend in the last two decades, particularly in girls (Bor, Dean, Najman, & Hayatbakhsh, 2014). Cross-sectional studies of mental health in early adolescence have

shown a marked increase in the female population between 2009 and 2014 (Fink et al., 2015). The impact of these trends is substantial. For example, it has been observed that children with mental health problems are more likely to (a) be excluded from school when compared to children without mental health problems (Green, McGinnity, Meltzer, Ford, & Goodman, 2005); and (b) experience problems in future employment, such as being in receipt of welfare benefits, or difficulty in maintaining continuous employment (Goodman, Joyce, & Smith, 2011; Knapp et al., 2015; Richard & Abbott, 2009).

In England, nearly 8% of 5–10 year olds have a diagnosable mental health disorder, compared to nearly 12% of 11–15 year olds; and 2% of all children, aged 5–16, had self-harmed (Department of Health & Department for Education, 2017). Recent data from the National Health Service, which looked at mental health difficulties, categorised into four broad categories (emotional, behavioural, hyperactivity, and other less common disorders) show that emotional disorders, such as anxiety or depression, were the most prevalent type

✉ Susana Castro-Kemp
Susana.Castro-Kemp@roehampton.ac.uk

¹ School of Education, University of Roehampton,
London SW155PJ, UK

² Department of Counseling, Clinical, and School Psychology,
University of California, Santa Barbara, USA

of disorder experienced by 5–19 year olds in 2017 (8.1%), and that there is an increase over time in the prevalence of this type of mental disorder in 5–15 year olds (NHS Digital, 2018).

In order to address this concerning rise in mental health diagnoses in England, the Department for Education and the Department of Health of the UK government jointly published a “Green Paper” (Department of Health & Department for Education, 2017; a preliminary report of government proposals that is published in order to provoke discussion) on mental health for children and young people, which redirected the focus of education policy and provision from solely addressing academic achievement towards mental health promotion in the school context. This Green Paper included a statement expressing commitment to significantly increase the funding for childhood mental health support (Department of Health & Department for Education, 2017). This is an important initiative in the current policy agenda, as there are well-grounded reasons to believe that focusing on mental health prevention in the school context will have long-term benefits for reducing mental health issues and promoting positive outcomes for children. For example, Weare and Nind (2011) examined reviews and meta-analyses of mental health interventions in schools, concluding that the most effective interventions focused on positive mental health were embedded within a whole-school approach, started early with the youngest children, and operated for a lengthy period of time. Similarly, Taylor, Oberle, Durlak, and Weissberg (2017) conducted a meta-analysis of school-based socio-emotional learning (SEL) universal interventions where follow-up outcomes demonstrate SEL’s enhancement of positive youth development.

Contemporary Approaches to Mental Health in Schools

In order to enhance mental health prevention in school context, both assessment and intervention procedures need to be in place for schools to effectively detect groups of vulnerable children for whom preventive actions should be implemented, rather than reactive ones. The latter were found to be adopted much more frequently than the former in English schools (Vostanis, Humphrey, Fitzgerald, Deighton, & Wolpert, 2013); however, research is consistent in that preventive approaches which lead to more gains in overall mental health ratings and are more cost-effective, when compared to approaches based on remediation (Dowdy et al., 2015; O’Connor, Dyson, Cowdell, & Watson, 2018). Preventive approaches are also more aligned with a definition of mental health that moves beyond the traditional understanding that the absence of mental illness equals mental health and is more concerned with overall well-being.

Well-being can be defined as a multidimensional construct, including social, emotional, physical, and spiritual dimensions (Pollard & Lee, 2003), which aligns with the mental health definition proposed by the WHO (2001, p. 5) as “subjective well-being, perceived self-efficacy, autonomy, competence, inter-generational dependence, and self-actualization of one’s intellectual and emotional potential, among others”. This definition is much broader than the traditional diagnostic-based approach. This distinction is important, as often mental health difficulties are not linked with well-defined diagnosable mental health conditions, especially in early phases of development: “Diagnosis-focused eligibility criteria ignore the research on the strong association between risk and poor child outcomes” (Cooper, Masi, & Vick, 2009, p. 8). Similarly, the same diagnostic category might be linked to different behavioural profiles (Castro & Pinto, 2015) and even to different brain functioning profiles (Astle, Bathelt, CALM Team, & Holmes, 2019).

In the context of these contemporary approaches to well-being and mental health, the utility of traditional diagnoses is debatable, as its exclusive adoption might be hindering the early identification of psychological states that, although not diagnosable, might have significant impact on children’s functioning and participation. In this context, an alternative approach to the problem of defining mental health in children is the dual-factor model (DFM). This has been recognised as the most holistic and comprehensive way of addressing and conceptualising mental health in children, and it posits that mental illness and mental wellness are two separate, however complementary, continua (Dowdy et al., 2015). From this point of view, it might be important to identify profiles of wellness, in addition to profiles of illness. Suldo and Shaffer (2008) who administered self-report assessments of positive indicators of wellness, such as subjective well-being, alongside negative indicators of psychological functioning (symptomatology), which resulted in the identification of four distinct groups designated as: complete mental health (57%), vulnerable (13%), symptomatic but content (13%) and troubled (17%). The groups differed in a variety of outcomes, supporting their distinction from each other. Similarly, Keyes and Lopez (2002) had previously proposed that well-adjusted adults have high levels of emotional well-being alongside high levels of psychological and social well-being, thus suggesting that psychological well-being is more than the absence of emotional and behavioural symptoms. Eklund, Dowdy, Jones, and Furlong (2010) looked into the utility of a dual-factor approach in college students where life satisfaction and personal adjustment but also emotional and clinical symptoms were assessed, with results consistent with previous research: psychopathology and subjective well-being are not opposite ends of one continuum, but separate and complementary dimensions. Although the studies supporting the DFM have been conducted mostly with

adults and adolescents, there is some evidence that a similar effect is present from much earlier ages (elementary/primary school; Smith, 2018). As a result of this consistent body of research suggesting that wellness and well-being (subjective well-being and sense of belongingness) are complementary to mental illness (or its absence), mental health interventions have started to target well-being levels as a preferred outcome linked to prevention, which has the advantage of a lower risk of stigmatisation.

The Role of School Belongingness

Studies have been emphasising the role of school connectedness or sense of belonging, for example, as important factors related to well-being that can predict later mental health outcomes in children and young people, particularly in adolescence/secondary school age (Bond et al., 2007; Wagle et al., 2018). The terms connectedness and belonging have often been used interchangeably, but there is a general understanding that school belonging may be regarded as a student's sense of affiliation or connection with school (Allen & Boyle, 2016). Positive school connectedness at 13–14 years of age has been linked to better outcomes in adulthood, whereas children with low school connectedness were found to be at higher risk of developing anxiety and depression symptoms (Bond et al., 2007). Similarly, an exploratory study using cross-sectional and longitudinal data from a high school in central California has shown that including an assessment of school belonging within a complete mental health screening procedure could contribute to the prediction of students' future sense of well-being (Moffa, Dowdy, & Furlong, 2016). Here, the authors identified complete mental health groups applying a dual-factor strategy and using belonging as a concurrent measure. Cross-sectional results showed differences in school belonging between students who reported low life satisfaction and those who reported average or high life satisfaction, regardless of reported level of psychological distress. Additionally, longitudinal data showed that life satisfaction and psychological distress were predictive of well-being and internal distress.

The studies presented above provide evidence on the usefulness of school sense of belonging to predict mental health outcomes and support the case for its inclusion as part of universal screening procedures. There is also evidence in support of the fact that it would be beneficial to prioritise screening for sense of school belonging as early as in primary school, given the importance of promoting wellness in preparation for transition to secondary school. Variables associated with belongingness, such as peer support and feeling safe at school, have been found to constitute protective factors in the transition to secondary school (Lester & Cross, 2015). In this context, criticisms have been made about the use of self-report measures for

mental health assessment with young children, but these have been counterbalanced by evidence suggesting that if the measures adopted have been developed and adjusted to be age-appropriate, their use is still appropriate (Deighton et al., 2013).

While the link between sense of belonging and mental health seems to have support in the extant literature, fewer studies have focused on the joint role of belonging and socio-demographic variables in predicting mental health. We know that socio-economically disadvantaged children and adolescents are two to three times more likely to develop mental health problems, especially when disadvantage persists over time, and it has been suggested that reducing socio-economic inequalities can have an impact on children's mental health (Reiss, 2013). Similarly, risk factors for many common mental disorders were found to be heavily associated with social inequalities (Allen, Balfour, Bell, & Marmot, 2014). Because the incidence and influence of socio-economic disadvantage are difficult to change as a result of psychological or psychoeducational interventions, the use of a more malleable variable such as belongingness as a dependent variable within intervention procedures may produce a more tangible change in mental health outcomes in children from disadvantaged backgrounds.

Based on the explained links between school belonging and well-being and on the need to generate more evidence on the joint role of socio-economic status and belongingness in predicting mental health outcomes, particularly in primary school children, the current study aims to examine how belongingness and other socio-demographic variables can predict membership to a specific profile of socio-emotional health in primary school children in England, specifically in Greater London, which is characterised by marked social inequalities and cultural diversity. Recently, the Income Deprivation Affecting Children's Index (IDACI; Smith et al., 2015) has been regarded, in England, as the best indicator of socio-economic status, with the advantage of being open-access data, without the restrictions of other indicators often used in the past, such as being in receipt of free school meal, which constitute sensitive data currently not released by schools. The IDACI measures the proportion of all children aged 0–15 living in income disadvantaged families.

To address the general aim of the study, two research questions were formulated: (a) What are the qualities and characteristics of “naturally emergent” profiles of socio-emotional health in primary school-aged children in England and (b) What is the predictive role of psychological sense of school membership, gender, main language spoken at home, and socio-economic status of the postcode on profiles of mental health?

Methods

Participants

Children were recruited from three primary schools in Greater London, across four year groups ($N=522$, ages 8–11 years old, $M=9.2$, $SD=1.0$). Table 1 shows the distribution of pupils per year group and gender. This was a convenience sample, where the schools that were already part of the research team's network of collaborations were invited to participate in the study. There were slightly more females (51%) than males (49%). About half (51%) of the students spoke English at home, with the remaining students indicating that they spoke another language at home, including Hindi, Arabic, and Polish. All students were proficient English speakers and were able to read and respond to the survey. The schools invited to participate were purposefully drawn from areas with distinct socio-economic levels, according to the Income Deprivation Affecting Children's Index (IDACI; Smith et al., 2015). Two of the primary schools are located in one of the top 25% most affluent local authorities of the IDACI distribution nationally ($n=443$), while the third school is located in a local authority within the top 25% most disadvantaged of the IDACI distribution, nationally ($n=79$), thus illustrating the marked inequalities that characterise the school population of Greater London. The schools were chosen based on their representativeness of the IDACI rank of the local authority where they are situated.

Procedure

The three schools participating in this study are part of the well-established network of educational partnerships that the research team holds in the area of Greater London. After obtaining approval from the authors' research institution ethics committee, the head teachers of partner schools were contacted and meetings arranged to brief them about the study. Once the head teachers and classroom teachers confirmed their willingness to participate in the study, opt-out forms were made available to all children in all primary level classes and to their parents, alongside the study brief; no

opt-out forms were received by the school or the research team. The paper-and-pencil survey was administered in the classrooms to whole groups, by trained researchers. Administration occurred on different days for each school, within 1 month. The survey included three measures assessing socio-emotional health and school belonging. The *Socio-Emotional Health Survey-Primary* (SEHS-P) was used as the clustering measure; the *Me and My school questionnaire* was used as a measure of external validity of the cluster solution found, as it has previously been found that when children differ in socio-emotional health, they are likely to score inversely on behavioural and emotional difficulties, which are assessed by this scale (Wagle, et al., 2018); and the *Psychological Sense of School Membership Scale-Primary* (PSSM-P) (Wagle et al., 2018) was used to examine whether school sense of belonging could predict cluster membership.

Measures

Three measures were used and included in the self-report survey for primary school children: the Socio-Emotional Health Survey-Primary (previously called the Positive Experiences at School Scale) for elementary school children (Furlong, You, Renshaw, O'Malley, & Rebelez, 2013), the Me and My school Questionnaire (Deighton et al., 2013), and the Psychological Sense of School Membership Scale-Primary (PSSM-P; Wagle et al., 2018).

The *Socio-Emotional Health Survey-Primary* (SEHS-P; Furlong et al., 2013) is a 20-item school-based and strength-based socio-emotional health measure for use with primary school children. The version adapted by Wagle et al. (2018) was used in this study, specifically the four subscales of gratitude, optimism, zest, and persistence. This measure was selected because of its specificity for primary school children and psychometric properties previously tested by Furlong et al. (2013). The four constructs measured by these scales are of foremost importance for the examination of mental health in children. Froh et al. (2011) reviewed several empirical studies concluding that gratitude is negatively associated with physical symptoms and positively associated with perceptions of social support, provision of emotional support, positive affect, social integration, multidimensional life satisfaction, and academic achievement. Zest is significantly and positively related to life satisfaction and assertiveness and negatively associated with internalising problems (Park, Peterson, & Seligman, 2006; Weber & Ruch 2012). Optimism is significantly related to successful coping with stress and illness, prosocial relationships, and subjective well-being (Boman, Furlong, Shocet, Lilles, & Jones, 2009). Persistence (Furlong et al., 2013) is associated with educational attainment, self-control, and academic performance (Duckworth & Quinn 2009). The items were modified and

Table 1 Is this table needed? Distribution of participants per year group and gender

Gender	Year groups				Total
	8 years old	9 years old	10 years old	11 years old	
Boy	52	62	81	59	254
Girl	43	77	88	60	268
Total	95	139	169	119	522

turned into questions, rather than statements, to increase the understanding and engagement of primary school children with the survey, and were responded on a six-point scale (1 = *No, never*; 2 = *No, almost never*; 3 = *Yes, sometimes*; 4 = *Yes, often*; 5 = *Yes, very often*; 6 = *Yes, always*). Each of the four subscales had five items, and subscale scores are reported as mean item response (range = 1–6). In the current study, the Cronbach alpha coefficients for this scale were gratitude $\alpha = .70$; optimism $\alpha = .69$; zest $\alpha = .64$; persistence $\alpha = .60$.

Me and My School Questionnaire (M&Ms; Deighton et al., 2013) used 16 self-report distress items designed specifically for use with primary school-aged children that employs a simple three-point scale: 0 = *never*, 1 = *sometimes*, and 2 = *always*. The *emotional difficulties* subscale has ten items [score range = 0–20, with 0–11 in the normal range (Deighton et al., 2013)], and *behavioural difficulties* subscale has six items [score range = 0–12, with 0–5 in the normal range (Deighton et al., 2013)]. In the current study, the M&Ms scale was used to examine the external validity of the solution of clusters found with the SEHS-P indexes, by comparing the scores of the profile clusters identified against the scores obtained on these two subscales. Given that the M&Ms has been used in previous studies as a measure of divergent validity in relation to measures of positive mental health and belonging (Wagle et al., 2018), we have included it in this study as a validity tool to support the identification of the clusters found. For the current studies sample, the M&Ms alpha coefficient was $\alpha = .78$.

The *Psychological Sense of School Membership Scale-Primary* (PSSM-P; Wagle et al., 2018) is a recently developed modification of the original 18-item PSSM (Goednow, 1993), which has been widely documented as a reliable and valid measure of school belonging, useful in various contexts (Cheung, 2004; Cowden, Govender, Oppong Asante, Reardon, & George, 2018; You, Ritchey, Furlong, Shochet, & Boman, 2011). The factor structure of the original scale was later examined with several studies finding that the negatively worded items formed their own factor and once these items were removed, a unidimensional factor structure of 11 items could be found (Gaete, Montero-Marín, Rojas-Barahona, Olivares, & Araya, 2016; Hagborg, 1998; Ye & Wallace, 2014; You et al., 2011). More recently, a nine-item unidimensional factor structure has been found sufficient to accurately grasp the school sense of belonging in primary school children, across different contexts—UK, China, and United States of America (Wagle et al., 2018), potentially providing a much more efficient way of screening for well-being levels in early years and allowing for screening in younger children. In the present study, we used the abbreviated nine-item version of the PSSM, designated as PSSM-P (primary), to measure school belongingness as a predictor of profiles of socio-emotional health. The items

included are: *Do you feel like you are a real part of your school? Are most teachers at your school interested in you? Do you belong at your school? Is there a teacher or other adult at school that you can talk to if you have a problem? Are people at school friendly with you? Are you included in a lot of school activities? Are you treated with as much respect as other students? Can you be yourself at school? Are you proud to be a part of your school?* A six-point scale was employed (1 = *No, never*; 2 = *No, almost never*; 3 = *Yes, sometimes*; 4 = *Yes, often*; 5 = *Yes, very often*; 6 = *Yes, always*). The PPSM-P total score is reported as the mean item response (range = 1–6). For the current studies sample, the PPSM-P alpha coefficient was $\alpha = .81$.

Sociodemographic information was recorded, which included gender, main language spoken at home (recorded as English or other than English), and the IDACI of the area where the schools are located, which was recorded as either top 25% disadvantaged or top 25% affluent.

Data Analysis

This first objective of this study was to explore and identify profiles of socio-emotional health among primary school children in England. To address this, hierarchical cluster analysis was conducted to explore the *natural* number of groups that the children in the sample could cluster in (Bergman, Magnusson & El Khouri, 2003). The variables inputted in the analyses were the four composite variables from the SEHS-P: gratitude, optimism, zest, and persistence, based on average scores of items in each subscale. These indexes were converted into standardised scores, since the assumption of normality was not met a priori. The number of variables inputted is considered appropriate in relation to the sample size for a cluster analysis. According to Formann (1984), the minimal sample size should be no less than $2k$ cases (where k = number of variables), preferably $5 * 2k$, which is considerably under the number of students we have included in our sample. Between groups-linkage was used as cluster method and squared Euclidian distance as measure between cases. The optimal solution between two and four clusters was requested.

To increase validity of the hierarchical three-cluster solution found through hierarchical procedures, we conducted *K*-means cluster analysis for the same number of groups, which confirmed the solution found. The distribution of year groups per cluster was tested using Chi-square statistics. To test the internal validity of the solution found, we examined the differences between the three clusters found in relation to the four SEHS-P original indexes. To test the external validity, the groups were compared against M&Ms indexes (emotional and behavioural). Both analyses were conducted using one-way ANOVA. Differences between indexes in each cluster were tested using one-sample *t* test.

In order to examine the joint role of sociodemographic variables and school belonging as a predictor of children's socio-emotional health profiles, multinomial logistic regression was conducted with the nine-item composite index derived from the nine-item PSSM-P, IDACI, language spoken at home, and gender as predictors of cluster membership.

Results

This study aimed to examine profile clusters of socio-emotional health in primary school children in Greater London areas of unequal socio-economic level, and to examine whether psychological sense of school membership along with sociodemographic variables such as IDACI, gender, and languages spoken at home were able to predict those profiles. The results regarding both aims are presented below.

The Identification of Patterns/Groups of Socio-emotional Health among Primary School Children

A three-cluster solution was identified through hierarchical cluster analysis, suggesting the children in our sample "naturally" group (according to Bergman et al., 2003) into three profiles of socio-emotional health, based on their SEHS-P scores. All three clusters in the sample had average scores above 3 (between the *Yes, sometimes* and *Yes, always* response options) of the rating scale for the SEHS-P ($\alpha = .90$). As there were no groups of children scoring very low on socio-emotional health in our sample, cluster 1 was named *mid-tier socio-emotional health*, comprising 63 children; these were the lowest scoring pupils. Cluster 2, named *mid-to-top socio-emotional health*, had 185 children, and cluster 3, named *top-tier socio-emotional health*, had 272 children. Table 2 shows the average scores for each SEHS-P index in each cluster, thus illustrating differences in level: cluster 1 has the lower-level ratings for all indexes and cluster 3 has the higher-level ratings. All indexes are significantly different from each other within each cluster. Effects sizes are medium to large in clusters 1 and 2 and small to medium in cluster 3, as measured by Cohen's d (Cohen, 1988; see Table 2). Figure 1 illustrates some differences in quality.

The distribution of year groups was found to be significantly different per cluster: $\chi^2(6) = 33.58, p < .001$. Table 3 illustrates this distribution: in year 3 the great majority of children group into the *top-tier* cluster and this changes in year 6, with only 38.7% being included in this group.

To test the internal validity of the three-cluster solution, the means of each SEHS-P index were compared across groups, with significant differences across all four indexes

Table 2 Average of SEHS-P indexes per cluster

	Profiles of social-emotional health		
	Mid-tier (1) <i>n</i> = 63	Mid-to-top tier (2) <i>n</i> = 185	Top-tier (3) <i>n</i> = 272
Gratitude			
<i>M</i>	4.01	5.13	5.75
SD	0.89	0.57	0.33
<i>df</i>	62	184	271
<i>t</i> test	35.8	123.49	283.97
<i>p</i>	< .001	< .001	< .001
<i>d</i>	.51	.38	.35
Optimism			
<i>M</i>	3.33	4.21	5.21
SD	0.82	0.72	0.55
<i>df</i>	62	184	271
<i>t</i> test	32.20	80.0	154.88
<i>p</i>	< .001	< .001	< .001
<i>d</i>	4.07 ^a	.31	.32
Zest			
<i>M</i>	3.52	4.11	5.23
SD	0.93	0.65	0.56
<i>df</i>	62	184	271
<i>t</i> test	30	85.8	153.01
<i>p</i>	< .001	< .001	< .001
<i>d</i>	.44	.30	.32
Persistence			
<i>M</i>	3.82	4.48	5.35
SD	0.79	0.79	0.50
<i>df</i>	62	184	271
<i>t</i> test	38.2	76.9	176.19
<i>p</i>	< .001	< .001	< .001
<i>d</i>	4.81 ^a	.33	.32

^aDifference is larger than two standard deviations

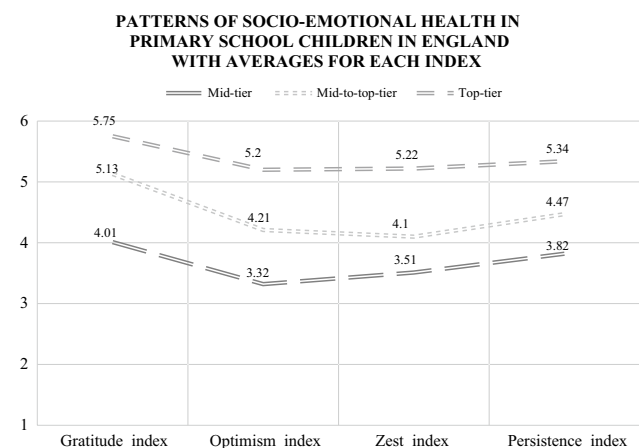


Fig. 1 Three-cluster solution for patterns of socio-emotional health in primary school children in England

Table 3 Distribution of children in different year groups per cluster of socio-emotional health

Year group	Frequency of children allocated to each group			Total
	Mid-tier (cluster 1)	Mid-to-top tier (cluster)	Top-tier (cluster 3)	
Year 3	9 (10%)	23 (25%)	62 (66%)	94
Year 4	9 (7%)	66 (48%)	63 (46%)	138
Year 5	23 (14%)	45 (27%)	101 (60%)	169
Year 6	22 (19%)	51 (43%)	46 (39%)	119
Total	63 (12%)	185 (36%)	272 (52%)	520

(non-standardised) between groups, with very large effect sizes, as measured by eta-squared coefficient (Richardson, 2011): gratitude, $F(19, 500) = 26.78, p < .001, \eta^2 = .50$, optimism, $F(21, 498) = 18.24, p < .001, \eta^2 = .43$, zest, $F(22, 497) = 9.63, p < .001, \eta^2 = .29$, and persistence, $F(19, 500) = 8.66, p < .001, \eta^2 = .25$ (see Fig. 1 for average of each index per cluster).

To evaluate the external validity of the cluster solution, one-way ANOVA was computed with the two indexes derived from the M&Ms scale ($\alpha = .77$): *emotional* difficulties and *behavioural* difficulties. Both indexes present significantly different averages between clusters. A Tukey post hoc test showed that all clusters differ from each other against the two indexes. Table 4 illustrates these differences.

Table 4 Differences between clusters regarding emotional difficulties and behavioural difficulties

M&Ms	Socio-emotional health clusters			F	df	η^2
	Mid-tier (cluster 1)	Mid-to-top tier (cluster 2)	Top-tier (cluster 3)			
Emotional difficulties						
M	1.71	1.57	1.36	4.08***	29, 488	.19
SD	0.42	0.32	0.28			
Behavioural difficulties						
M	1.75	1.49	1.42	5.61***	17, 500	.16
SD	0.38	0.25	0.23			

*** $p < .001$

Table 5 Parameter estimates for the prediction of cluster allocation by means of a reduced PSSM-P index and IDACI

	Mid-to-top tier				Top-tier			
	χ^2	β	OR	95% CI	χ^2	β	OR	95% CI
Socio-economic status (IDACI)	1.56*	0.46	1.58	0.77, 3.25	16.39*	1.57	2.25	10.30, 4.81
PSSM	9.72*	0.98	2.61	1.88, 3.80	98.86*	2.16	8.67	5.66, 13.26

$R^2 = .37$ (Nagelkerke)

PSSM psychological sense of school membership

* $p < .05$

Predictors of Cluster Membership: The Role of Psychological Sense of School Membership and Sociodemographic Variables

To examine the predictive value of school belonging and sociodemographic variables in relation to profiles of socio-emotional health, we conducted multinomial logistic regression with the predictors: index of the PSSM-P ($\alpha = .83$), main language spoken at home (English or other), and IDACI rank (top 25% disadvantaged and top 25% affluent nationally). The final model is significantly better than the baseline model with only the intercept included: $\chi^2(6) = 524.91, p < .001$. Only psychological school sense of membership and IDACI rank predict cluster allocation. Gender [$\chi^2(6) = 5.48, p = .07$] and main language spoken at home [$\chi^2(6) = .546, p = .761$] did not significantly predict cluster membership. Table 5 shows estimate parameters for these predictors. Considering cluster 1 as the first indicator, children in cluster 3 (highest socio-emotional health scores) are 4.81 times more likely to come from an affluent local authority [$\chi^2(1) = 16.39, p < .001$]; there are no differences between cluster 1 and cluster 2 [$\chi^2(1) = 1.52, p = .212$]. However, psychological sense of school membership is a better predictor than the IDACI rank: children in cluster 2 have 2.61 times better sense of school membership than children in cluster 1 [$\chi^2(1) = 9.72, p < .001$], and children in cluster 3 have 8.67 times better sense of school membership than children in cluster 1 [$\chi^2(1) = 98.96, p < .001$]. Using Nagelkerke coefficient, it was possible to observe

that psychological sense of school membership and IDACI rank predict 37% of the variance in allocation to socio-emotional health profiles; however, sense of school membership accounts for 34% of this variance alone.

Discussion

This study explored the predictive role of school sense of belonging and sociodemographic variables in predicting profiles of socio-emotional health in primary school children in England. Results show that (a) it is possible to identify groups of students at primary school level based on *socio-emotional health ratings on gratitude, zest, optimism, and perseverance* and that (b) school sense of membership is the best predictor of these group profiles. In combination, school membership and IDACI rank of the postcode explained 37% of the variance in socio-emotional health profiles. However, school belonging alone explained 34% of the variance in profiles. Therefore, the main assertions that can be drawn from these results are that: (a) a child who lives in a disadvantaged local authority and experiences lower levels of school membership is more likely to score lower on socio-emotional health; however, belonging has more predictive power than socio-economic status; and (b) a nine-item PSSM-P scale has the potential to efficiently identify groups of children with different profiles of socio-emotional health, without the stigmatising side effect that might be triggered by mental health measures based on symptomatology or negative experiences alone.

The sample in this study had, overall, high ratings on socio-emotional health; however, it was possible to identify three patterns of socio-emotional health, which differed from each other significantly in relation to average ratings on the SEHS-P, and also present some differences regarding the subdimensions of the SEHS-P. For example, optimism is the lowest index in cluster 1 [*mid-tier*] and 3 [*top-tier*], but not in cluster 2 [*mid to high*], where zest presents the lowest score. The mid-tier group (cluster 1) presents scores ranging from values *yes, sometimes to yes, often* and presents no ratings at the highest values of the six-point scale, with optimism particularly low compared to other groups. Additionally, when validating these results using a difficulties-based measure (the M&Ms), we could see that children grouped in the *mid-tier cluster* (cluster 1) present more emotional and behavioural difficulties. In line with the three-tier model of provision proposed by Mrazek and Haggerty (1994)—where universal screening for all would allow the identification of children that could benefit from more targeted interventions—schools that, as a result of universal screening, have high proportions of children scoring at the level of cluster 1

(predicted by low levels of school membership) are particularly encouraged to initiative preventive actions.

Recent studies have shown the effectiveness of universal screening as a key component of service delivery for complete mental health, where psychological services are moved from the back of the system to the forefront, directly contributing to prevention and early intervention (Dowdy et al., 2015). According to Dowdy et al. (2015), universal screening is a contemporary approach that provides an alternative to the traditional disorder-based screening, which is designed to identify only 15–20% of students experiencing mental health issues—most likely those with a diagnosable problem. Within this traditional approach, others with non-diagnosable conditions but low levels of well-being remain in a grey area of assessment and provision. Therefore, it is important to be able to identify those that can benefit from a preventive approach to service delivery, other than just those who need remediation. The current study provides evidence regarding the role of the abbreviated PSSM-P scale in providing well-being information of crucial importance for a preventive approach to complete mental health. The fact that the PSSM-P is short, easily understandable, and based on the students' experience in school makes it a very efficient tool. It is also important to highlight that the reduced version of the PSSM-P has been examined for its cross-cultural validity and construct validity, with very positive outcomes (Wagle et al., 2018). The results of this study are promising because it has shown that even if a child is from a disadvantaged background (which influences socio-motional health levels), school sense of belonging is a much stronger predictor, and therefore, interventions to promote belonging are likely to improve well-being regardless of socio-economic backgrounds. This is in line with previous studies suggesting the belongingness has high predictive power in relation to mental health. For example, based on the dual-factor approach to mental health, and using the SEHS with 118 students from tenth grade (in the USA), Kim, Furlong, Dowdy, and Felix (2014) studied how strongly subjective well-being was associated with measures of positive psychological dispositions (using the SEHS) and psychological distress (using the Behavioural and Emotional Screening System [BESS]). Results indicated that the strength-based SEHS explained 32% of the variance in the students' global subjective well-being, while the psychological distress-based BESS added only an additional 8% of explained variance. Adopting a well-being approach in school-based universal mental health screening would support a wider understanding of mental health and inform reactive and proactive interventions that serve both the enhancement of strengths and the resolution of problems (Moore et al., 2015). Arslan (2018) demonstrated the relation between sense of school belonging and well-being in adolescents. Our research shows that

this relation may start much earlier, thus supporting the assumption that universal interventions should start as early as possible. Such interventions could include recognised techniques to support the development of school sense of belonging, such as peer–peer approaches, which have been highlighted by students themselves as key (Gowing & Jackson, 2016), especially for those approaching transition to secondary school, given the role of peer relationships in this process (Lester & Cross, 2015). Additionally, the fact that interventions targeting belonging are independent of socio-economic status may be key to changing the mental health outcomes for children from disadvantaged backgrounds.

Looking at the difference in quality between the identified socio-emotional profiles, it is observable that children clustered in group 1 (*mid-tier*), with the lowest average score on socio-emotional health, also had particularly low scores on optimism, when compared to the other groups. These findings are in line with other research studies that have established links between optimistic attitudes and well-being/mental health in children. In Australia for example, an optimism-based intervention programme evaluated through a randomised controlled trial has led to fewer internalising behaviours from the children, according to their parents (Roberts et al., 2018). Similarly, high levels of optimism have been found to have a positive impact on school engagement in primary school children (Wilkins, Boman, & Mergler, 2015) and have been proven to lead to higher average academic achievement over time (Feldman & Kubota, 2015). One could then consider that, given that belongingness predicts the variance in levels of optimism to a great extent, investing on interventions to promote school sense of belonging can positively target optimism; Eicher, Staerklé, & Clémence (2014), for example, have shown that, over time, optimism can buffer the effects of stress in secondary school students. Our results suggest that this phenomenon might start even earlier.

Lastly, the distribution of year groups differed significantly across profiles of socio-emotional health, with cluster 3 populated mostly by younger children. These results seem to match extant evidence suggesting that transition from primary to secondary can potentially change well-being levels (Lester & Cross, 2015) and constitute one argument in defence of initiating well-being prevention measures targeting transition to secondary.

Educational, Clinical, and Policy Implications

The findings from this study suggest that both socio-economic status of the postcode area and school sense of belonging predict socio-emotional health profiles in children of primary school age, but school sense of belonging is accountable for most of the variability in those profiles. This is good news for educators and educational administrators looking

to promote mental health and well-being in school. Promoting sense of belonging can make a significant difference to the socio-emotional health of the children, despite socio-economic status. In our study, gender and main language spoken at home did not play a significant role in predicting socio-emotional health patterns. Our results suggest that initiating well-being promotion and prevention at primary school level might not be too early. The abbreviated PSSM-P scale can be used by practitioners in school context to ascertain overall sense of belonging without the potentially stigmatising consequences of using mental health measures based on negative experiences. This can be part of a universal screening procedure, which has been mentioned in the literature as fundamental for the achievement of complete mental health (Dowdy et al., 2015). Universal screening has been highlighted as particularly welcome in the English context where the high rates of mental health issues among children and adolescents have been regarded as an emergent public health crisis (Humphrey & Wigelsworth, 2016). In line with our findings, it has also been suggested that universal screening as a preventive action should start as early as possible, with the obvious advantage that all children would be included, making this an effective prevention initiative with optimistic results (Costello, 2016). The study also shows that belonging can affect socio-emotional health in spite of socio-economic status. In this process, having efficient measurement tools is essential, and although there is a myriad of standardised tools to assess socio-emotional health in childhood (Humphrey & Wigelsworth, 2016), using the abbreviated PSSM-P has the advantage of providing a quick and usable-by-all first point of assessment, bringing to the attention of practitioners and educators children that do not yet have a mental health diagnosis but are low on well-being levels.

Study Limitations and Implications for Future Research

It is important to highlight that although the present study has been conducted with a large sample of primary school children, all three schools were recruited from one local authority in Greater London. Future research should explore the validity of the identified profile clusters of socio-emotional health in a wider variety of schools, especially in disadvantaged areas, given the well-established links between poverty and mental health (WHO, 2014). This might explain why the children in our sample scored relatively high on socio-emotional health. A more diverse sample would allow the identification of potentially more clusters of socio-emotional health, with more obvious differences in quality. Future research should seek larger data sets with which to examine normative patterns that can be used to inform educational and clinical decisions related to providing special youth support services. Lastly, more studies of longitudinal

nature are necessary to establish the success of well-being promotion from young ages, by analysing future outcomes on adolescents and young adults' well-being and academic performance.

Conclusion

The evidence from this study shows that psychological sense of school membership, as measured by an abbreviated PSSM-P, alongside socio-economic status of the postcode, explains a substantial amount of the variance in socio-emotional health profiles of primary school-aged children; however, belonging accounts for the vast majority of that variance. The study adds to the current available literature on measures of sense of school belonging, highlighting the usefulness of the abbreviated PSSM-P scale as a cost-effective measure for universal screening and early identification, following a well-being-based approach rather than a deficit-based approach. Universal screening of school belonging in primary school might be an effective preventive action in relation to later mental health and well-being. A review of the evidence available regarding the implementation of mental health supported for children and youth in developed countries highlights that too often services are hampered by lack of government policy, inadequate funding, and a dearth of trained professionals, but early intervention has been proven efficient in promoting positive adulthood (Kieling et al., 2011). Future research should focus on reviewing the best available evidence for implementation of school-based universal strategies promoting sense of school belonging, given its links to well-being outcomes, and assess the longitudinal benefits of such implementation.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Research Involving Human Participants and/or Animals All procedures performed in this study involving human participants were in accordance with the ethical standards of the University of Roehampton's ethics' committee (#EDU 16/115) and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

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