Journal of Happiness Studies (2025) 26:47
https://doi.org/10.1007/s10902-025-00871-x

RESEARCH PAPER

Improving Wellbeing Through Local Communities: A Mixed Methods Study on the Role of Relationship Building

Lowri Wilkie[1] · Sian Roderick[4] · Zoe Fisher[2,3,6] · Alina Dray[1] · Peter Granger[5] · Andrew H. Kemp[1]

Accepted: 4 February 2025

Abstract
Given the rising demands of chronic conditions and mental health challenges, there is an urgent need to reduce burden on formal, statutory services. Local communities are underutilised yet offer many opportunities to facilitate the key determinants of health and wellbeing. Local Area Coordination (LAC) provides a practical, asset-based approach in which purposefully recruited coordinators meet and build relationships with community members, use their strengths and leverage community assets to help them build their version of 'the good life'. Here we report on the impact of LAC on wellbeing outcomes and explore potential mechanisms underpinning the approach. A rigorous mixed-methods design was implemented including data from psychophysiological synchrony, a quantitative survey, and qualitative ripple effects mapping. The presence of in-phase cardiac synchrony was found during conversations between coordinators and community members, suggesting physiological attunement during interaction. Survey data analysed using partial least squares structural equation modelling found that relationship rapport significantly predicted community integration, which in turn, predicted the wellbeing of community members. Longer meeting durations predicted improved relationship rapport, whilst the frequency of meetings did not. Qualitative feedback indicated that the person-centred approach was a key mechanism underpinning its success and that fostering a safe, trusting relationship is crucial for bridging people into the community. Overall, Local Area Coordination's community-led approach is a promising opportunity to harness community assets, empower individuals, and contribute to a more inclusive and connected society.

Keywords Community · Wellbeing · Heart-rate variability · Relationships · Health and social care

1 Introduction

1.1 Context and Challenges

Health and social care systems must urgently adapt to the changing pattern of population health needs, as the number of people living with chronic conditions, mental health

Extended author information available on the last page of the article

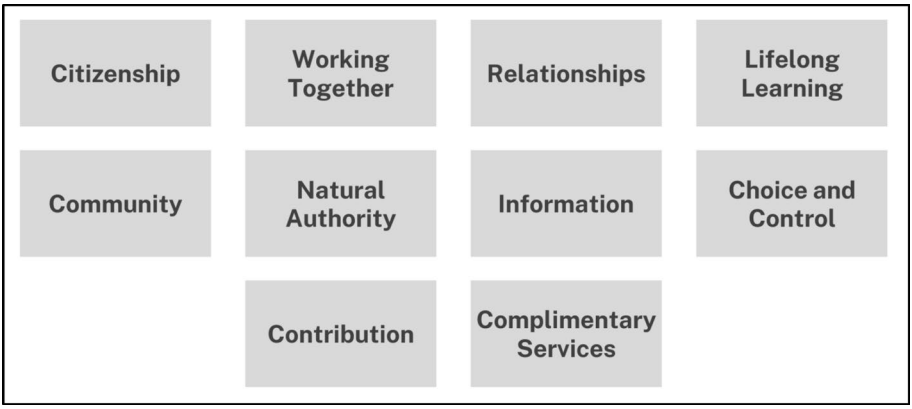

Fig. 1 The 10 local area coordination principles (Bartnik & Broad, 2021)

disorders, and multi-morbidities is rising (House of Commons Library, 2023; Kingston et al., 2018; Marmot, 2024; ONS, 2023). This trend is exacerbated by persistent and worsening health inequalities, with those in the most deprived areas developing multiple long-term conditions earlier and experiencing worse health outcomes (Hayanga et al., 2023; Lowther-Payne et al., 2023; Marmot, 2020; McCay, 2022). Health and social care models designed to support individuals only at the point of crisis or illness can only respond by further increasing demand, which is neither financially sustainable nor morally ideal. To overcome these challenges, there is an urgent need to build whole health and wellbeing, and support people to live happier and healthier lives in their own communities. Communities offer abundant opportunities to foster wellbeing through faith groups, sports and leisure activities, social support networks and access to green spaces, for example. However, many individuals, particularly those with socioeconomic disadvantages, are unable to fully access these opportunities due to structural barriers such as income inequality, education, or disability. This research explores the potential of Local Area Coordination (LAC) as a means of addressing these barriers and creating equitable opportunities for wellbeing and health.

1.2 Local Area Coordination (LAC)

LAC is a positive, person-centred approach that aims to strengthen communities and reduce pressure on statutory services by supporting people to find local resources and solutions to their challenges (Bartnik & Broad, 2021; Broad, 2015; Lunt et al., 2021; Roderick et al., 2016). Purposefully recruited coordinators are embedded within neighbourhoods to leverage community assets, identify, and build relationships with individuals who might need support. LAC helps people to live their version of the 'Good Life' through their aspirations, strengths, contribution, and connections. LAC is a positive, person-centred approach which understands the whole person's context beyond the specific challenge or illness they are experiencing. Figure 1 outlines the core principles of LAC, emphasising its alignment with autonomy, community empowerment, relational support, and asset-based development.

1.3 The Science of Wellbeing and the GENIAL Framework

Aligned with LAC's positive approach and the principles of positive psychology (Seligman, 2011), this research characterises wellbeing, not as merely the absence of ill-being, but the presence of positive and adaptive functioning that contributes to a fulfilling and satisfying life. In recent years, there has been an increasing effort to broaden the scope of wellbeing science (Kemp and Edwards, 2022) from individual positive psychology to encompass higher levels of scale (Kern et al., 2020; Lomas et al., 2020), and target groups and systems within which individuals are embedded (Waters et al., 2022) including communities, workplaces (Lomas et al., 2019; Theeboom et al., 2014), universities (Oades et al., 2011), cities (Ballas, 2013), and nations (Antó et al., 2021; Waters et al., 2022). The GENIAL framework (Kemp & Fisher, 2022; Kemp et al., 2017a, b; Mead et al., 2019, 2021) is an interpretative framework of the wider published literature which integrates these scales, conceptualising wellbeing as a connection to the self (e.g., emotional regulation, purpose, health behaviours), others (e.g., personal relationships, community integration), and the planet (e.g., nature connection).

The GENIAL framework also highlights the bidirectional relationship between mind and body, with the vagus nerve—a main component of the parasympathetic nervous system (PNS)—serving as a key physiological link between physical and mental health. The vagus nerve regulates stress responses and promotes calm by balancing the sympathetic nervous system (SNS), with its function often measured via Heart Rate Variability (HRV), a marker of autonomic flexibility and wellbeing (Shaffer & Ginsberg, 2017; Wilkie et al., 2022a, b). Additionally, the GENIAL framework emphasises the role of wider socio-structural factors (e.g., education, income, and culture) and behaviour change in shaping health and wellbeing (Kemp et al., 2017a, b).

1.4 Research Aim and Overview

Despite LAC's potential to enhance individual and community wellbeing, limited peer-reviewed research has explored its impact or the mechanisms driving its success. This study uses a mixed-methods design to fill this gap, offering a comprehensive evaluation of LAC's effectiveness and psychosocial outcomes. The research comprises three interrelated studies:

1. Study One investigates the physiological basis of relationship quality between coordinators and community members, using autonomic synchrony as a potential marker of high-quality relationships.
2. Study Two employs a structural model informed by the GENIAL framework and social support theories to examine how LAC predicts wellbeing, focusing on relationship quality and community integration.
3. Study Three uses Ripple Effects Mapping (REM) to qualitatively explore individual, collective, and systemic changes resulting from LAC implementation.

By integrating physiological, quantitative, and qualitative methods, this research provides a holistic understanding of LAC's mechanisms and outcomes, offering valuable insights into its potential to address complex health and wellbeing challenges.

1.5 Rationale for Cardiac Synchrony (Study One)

Relationship building is central to LAC's success (Mason et al., 2021) and understanding coordinator-community interactions is key to evaluating its impact. Physiological synchrony provides an objective measure of connection between individuals, reflecting the degree to which their physiological states align. Research on client-therapist dyads has highlighted HRV synchrony as a marker of co-regulation, essential for connection, trust, and mutual support (Coutinho et al., 2021; Koole & Tschacher, 2016; Tschacher & Meier, 2019). Given the importance of relationship building in LAC, this study aims to examine the presence of cardiac synchrony during coordinator-community interactions. We also acknowledge that while synchrony indicates a connection between individuals, the valence of this connection can be either positive or negative and that synchrony might therefore reflect connection rather than its quality or outcome. Therefore, we also aim to decipher whether this physiological indicator correlates with positive self-reported relationship quality.

1.6 Rationale for the Structural Model (Study Two)

The structural model (see Fig. 2) for Study Two is grounded in the GENIAL framework and social support theories, which emphasise the interconnectedness of social

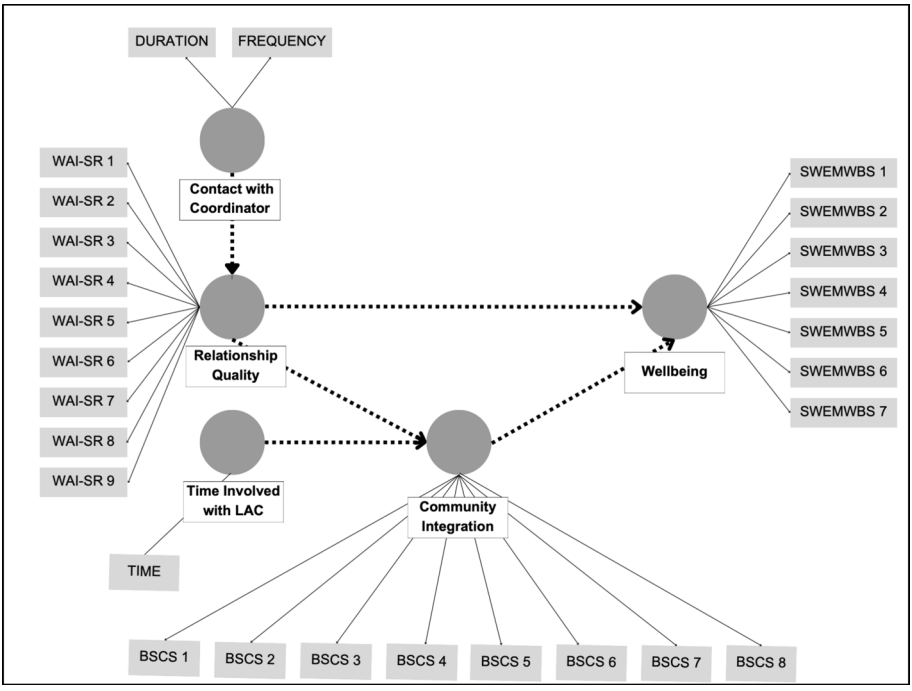

Fig. 2 A-priori theoretical model for study two. WAI-SR refers to Working Alliance Inventory (Relationship Quality). SWEMWBS refers to Warwick Edinburgh Scale (Wellbeing) and BSCS refers to Brief Community Scale (Community Integration)

relationships and wellbeing (Haslam et al., 2009; Jetten et al., 2014; Kemp & Fisher, 2022; Kemp et al., 2017a, b; Mead et al., 2021; Williams et al., 2020). In the context of LAC, community integration is predicted to be a significant determinant of wellbeing. This is supported by evidence that social capital—defined as the networks, norms, and trust that enable collective action—and social cohesion, which fosters shared values and equal opportunities, positively influence health and wellbeing, particularly in deprived neighbourhoods and among individuals with chronic illnesses (Kawachi et al., 1997, 1999; Waverijn et al., 2014, 2017).

Unlike referral or prescription-based approaches, which often face challenges like high dropout rates and inconsistent facilitator training (Bickerdike et al., 2017; Mossabir et al., 2015), LAC focuses on relationship-building between coordinators and community members. High-quality relationships, characterised by compassion, patience, and "purposefully unprescribed" conversations, are hypothesised to be critical for fostering effective community integration (Bartnik & Broad, 2021; Mason et al., 2021). Consistent, meaningful interactions with coordinators are predicted to enhance relationship quality by building trust and rapport. Furthermore, it is hypothesised that the amount of time spent engaging with LAC will predict the extent of community integration. Regular contact with coordinators is hypothesised to enhance relationship quality, as consistent interactions foster trust and rapport. As a test of the efficacy of LAC as an approach, we also predict that the amount of time spent engaging with LAC, will predict how integrated the person is to their community. By incorporating these constructs, the model aims to reveal how LAC may enhance community integration and wellbeing through relationship rapport.

1.7 Rationale for Qualitative Study (Study Three)

The third qualitative study aims to explore the broader impacts of LAC on individual and collective wellbeing that may not be fully captured through quantitative measures. Ripple Effects Mapping (REM) will be employed to identify and visualise the wider social and personal changes facilitated by LAC, providing a comprehensive understanding of its impact. REM allows for capturing complex, interconnected outcomes and identifying key mechanisms through which LAC operates (Chazdon et al., 2017). This approach involves community members, coordinators and other stakeholders in a participatory manner, ensuring varied personal perspectives are included. By incorporating qualitative insights, the research seeks to provide a richer, more holistic view of how LAC supports wellbeing, highlighting both direct and indirect effects on individuals and communities.

1.8 Mixed Methods Design

Our study uses a concurrent triangulation mixed-methods design, collecting and analysing quantitative and qualitative data separately before integrating findings during interpretation (Creswell & Clark, 2011; Dawadi et al., 2021; Leech & Onwuegbuzie, 2009). Guided by a critical realism stance, which acknowledges an objective reality also shaped by social and cultural factors (Mukumbang, 2023), this approach provides complementary insights for a deeper understanding of how LAC's approach works (Fig. 3).

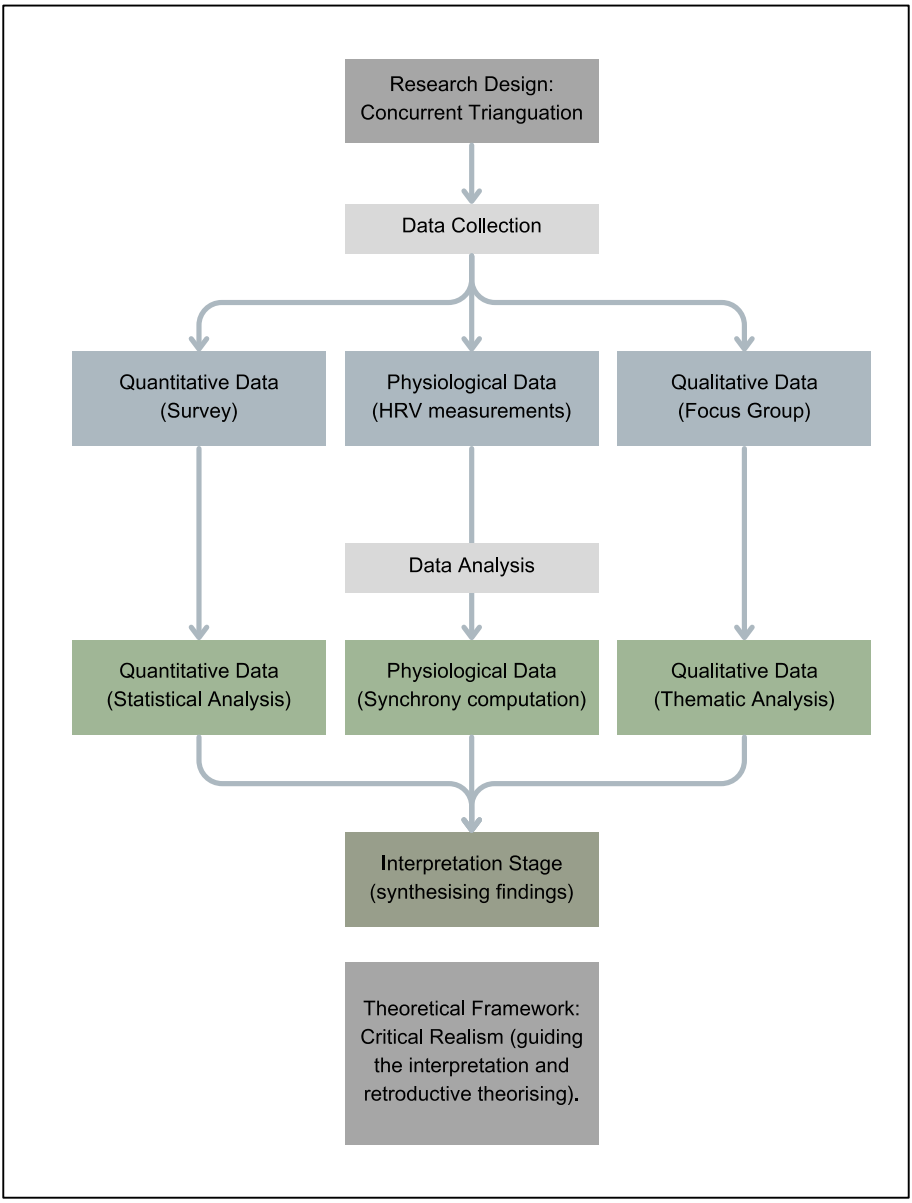

Fig. 3 Flowchart Illustrating the Concurrent Triangulation Design and Data Analysis Process in the Study

2 Study 1: Physiological Synchrony

The first study investigates the physiological basis of relationship quality within Local Area Coordination (LAC), focusing on the role of emotional co-regulation in fostering supportive interactions. Specifically, it examines whether autonomic synchrony between

coordinators and community members acts as a physiological marker of relationship quality.

2.1 Methodology

2.1.1 Hypotheses for Study 1

- **H1:** Physiological synchrony will be present in coordinator-community member dyads.
- **H2:** Physiological synchrony in coordinator-community member dyads will significantly correlate with self-reported relationship quality.

2.1.2 Participants

All LAC coordinators in Swansea, UK, at the time of the study were invited to participate, provided they could identify a willing community member they supported. Six coordinators and eight community members formed eight dyadic pairs, with two coordinators participating twice with different community members. Coordinators had a median age of 44.5 years, were all White, and predominantly female (4 of 6), with a median of 1.5 years of experience. Community members, also all White, were predominantly female (4 of 6) with a median age of 62.3 years. Common conditions included loneliness (3 members), with some reporting physical (n = 2) or mental illness (n = 1).

2.1.3 Materials

Data was collected via Polar H10 strap monitors. The H10 is highly correlated with hospital grade electrocardiogram (ECG) monitors (r = 0.997) (Gilgen-Ammann et al., 2019). Real-time data was captured by connecting the monitors to 'Heart Bond Local' app for Apple iPhone using Bluetooth. Heartbond Local (2022) is a smartphone app created by author PG for the recording, signal processing and calculation of HRV synchrony measures from two users in real-time. Additional participant demographic questions necessary to accurately interpret HRV data were also collected including when the participant last exercised, ate, consumed caffeine and alcohol, slept and smoked cigarettes, as well as understanding any blood pressure, heart, or respiratory conditions (Fatisson et al., 2016). Participants also completed survey measures (described in study part two).

2.1.4 Procedure

Data collection either took place in a private office space at Swansea University or at the community members' own homes in the community when this was appropriate. Participants firstly completed survey measures with an integrated consent form (see Study 2). Once HRV monitors were correctly fitted, the researcher left the room allowing the dyadic pair to continue a normal conversation, involving the community member updating the coordinator on their life since they last met.

2.1.5 Analysis

Signal pre-processing was conducted to obtain cardiac measures (heart rate, low frequency HRV and high frequency HRV). A despike algorithm was applied, whereby any value more than ± 20 bpm between beats was replaced with running average HR (also known as interpolation of degree zero) (Salo et al., 2001) for a 30 s window. Recordings were also manually examined visually for ectopic beats and artifacts to check the algorithm. Discrete Fourier Transform was computed using despiked HR every second using a running 32s window. High frequency bin values ranged from 0.157 to 0.406 Hz and low frequency values ranged from 0.063 to 0.157 Hz.

The statistical software Surrogate Synchrony (SUSY) written in R was used to quantify physiological synchrony (http://www.embodiment.ch) (Tschacher & Haken, 2019; Tschacher & Meier, 2019) and the presence of synchrony was calculated by testing the effect size of dyadic synchrony scores against zero using a one sample t-test. Additional methodological detail on quantification of physiological synchrony is provided in Supplementary Material 1.

3 Results

3.1 Presence of Synchrony

An example of low frequency HRV synchronisation taken from one dyad, plotted visually is available in Supplementary Material 2. Both non-absolute heart rate and low frequency heart rate variability were significantly higher than zero (see Table 1), suggesting physiological synchrony was present in both, thereby supporting Hypothesis 1.

3.1.1 Assessment of Correlation between Synchrony and Relationship Quality

The assessment of correlation between synchrony and relationship quality was analysed using non-absolute synchrony only, as synchrony was only present in non-absolute values.

Table 1 Descriptive statistics and one sample t-test results for presence of synchrony

Measure	Mean	*SD*	*t*	*df*	*p*
ESabs HR	0.067	0.139	1.365	7	0.214
ESnoabs HR	0.155	0.114	3.861	7	0.006*
ESabs LF	− 0.040	0.133	− 0.845	7	0.426
ESnoabs LF	0.174	0.136	3.634	7	0.008*
ESabs HF HRV	0.032	0.195	0.464	7	0.656
ESnoabs HF HRV	0.057	0.086	1.880	7	0.102

HR = Heart rate, LF = Low frequency, HF = High frequency, HRV = Heart Rate Variability, ESabs = effect size of the mean Z computed using absolute similarity of the HRV signals, irrespective of the direction of the correlation. ESnoabs = effect size of the mean Z computed without using absolute values, considers the directional nature of the correlation between the HRV signals to get a more nuanced view of synchrony

Table 2 Results of Spearman's rho correlation of synchrony with relationship quality

Variable		ES_{noabs} HR	ES_{noabs} LF HRV	ES_{noabs} HF HRV
Coordinator repported alliance (WAI-SR)	Spearman's rho	0.313	0.229	−0.349
	p-value	0.450	0.586	0.396
Participant reported alliance (WAI-SR)	Spearman's rho	−0.323	0.539	0.311
	p-value	0.435	0.168	0.453

*Below 0.05 significance threshold

A Spearman's correlation revealed that ES_{noabs} measures of physiological synchrony were not significantly correlated with coordinator nor community member relationship alliance scores (see Table 2). Thus, Hypothesis 2 was not supported.

3.1.2 Exploratory Analyses

An exploratory analysis was conducted to investigate the relationship between HRV synchrony, wellbeing and various resting HRV measures (Root Mean Square of Successive Differences, Standard Deviation of NN intervals, HF HRV, LF HRV). Given the small sample size and non-normal data distribution, Spearman's rank-order correlation matrix was used for this analysis. The results indicated that there were no significant relationships between the resting HRV measures and HRV synchrony. A significant negative correlation was found between non-absolute HF HRV synchrony and wellbeing using Spearman's correlation, $\text{rho} = -0.795$, $p = 0.018$. No other HRV measures were significantly correlated to wellbeing.

4 Study 2: Cross-Sectional Survey

The second study builds on the findings of the first by examining the factors associated with community integration and wellbeing in LAC. Using structural equation modelling, this study quantitatively investigates the pathways through which relationship quality predicts these outcomes.

4.1 Methodology

4.1.1 Hypotheses for Study 2

- H3: The frequency and duration of regular contact between community members and their coordinators will significantly predict perceived relationship quality.
- H4: Perceived relationship quality will significantly predict community integration.
- H5: Perceived relationship quality will significantly predict community members' wellbeing.

- H6: The length of time the community member has known their coordinator will significantly predict community integration.
- H7: Community integration will significantly predict community members' wellbeing.
- H8: Community integration will mediate the association between relationship quality and wellbeing.

4.1.2 Participants

A cross-sectional survey was conducted across 12 regions of England and Wales in which were implementing Local Area Coordination in collaboration with the LAC network (https://lacnetwork.org/). Participants were community members living in regions where LAC was implemented, and who had any involvement with their coordinator at the time of study. They were recruited via posters and dissemination of study information through coordinators' own network, word of mouth and social media platforms. A total of 52 participants completed a cross-sectional survey, comprising 36 females, 14 males and 1 non-binary. Age ranged from 18 to 65+ and all reported being of white ethnicity. 33% of respondents reported experiencing loneliness, 33% reported having a mental health condition and 25% reported a physical health condition. When asked to rank between 1–10 where on a slider they felt best represented their social standing the mean ranking for their community standing was M = 4.91 (SD = 2.41) and for their overall standing in the country was M = 5.24 (SD = 2.04).

4.1.3 Survey Measures

Demographic Information: Participants provided demographic information including age, gender, and ethnicity.

Overall Health: One single item ("In general I would say my health is…") from the Happiness Index (Musikanski et al., 2017) was used to measure overall health via a 5-point Likert scale. This single-item measure has been validated for use in population-based studies (Musikanski et al., 2017).

Socioeconomic Status: The MacArthur Scale of Subjective Social Status (SSS (Adler et al., 2000)) was used as an indicator of socioeconomic status. This scale is a two question, 10-rung ladder where respondents indicate their perceived social standing relative to others in society (first question) and within their community (second question). The MacArthur Scale does not provide internal reliability scores due to its two-item format but is widely accepted as a robust measure of subjective SES.

Personal Conditions: Participants identified whether they had a learning disability, physical health condition, mental health condition, experienced loneliness, substance dependency, homelessness, or were a migrant, asylum seeker, refugee, or immigrant to the UK. They were also asked how long ago they were introduced to LAC, how frequently they engage with their coordinator, and the average duration of their interactions.

Wellbeing: Wellbeing was measured using the Warwick–Edinburgh Mental Wellbeing Scale—Short Version (SWEMWBS). The SWEMWBS consists of 7 items, each rated on a 5-point scale from 'none of the time' to 'all of the time'. For example "How often have you been feeling optimistic about the future?". This measure correlates extremely well to the original scale (r = 0.95) and has good internal consistency (Cronbach's alpha = 0.89) (Fat et al., 2017).

Community Integration: Community integration here refers to the community members' perceived sense of community integration and was measured using The Brief Sense of Community Scale (BSCS) (Peterson et al., 2008). The BSCS consists of 8 items rated on a 5-point Likert scale ranging from 'strongly disagree' to 'strongly agree' for example "I feel at home in this community." It has high internal consistency (Cronbach's alpha = 0.92 overall, range 0.77–0.94) and demonstrated factorial validity (Peterson et al., 2008).

Relationship Quality: Community members' perceived relationship quality with their coordinator was measured using the Working Alliance Inventory – Short Revised (WAI-SR). The word 'therapist' was replaced with the word 'coordinator' for the context of LAC. The WAI-SR consists of 12 items rated on a 5-point scale from 'seldom' to 'always' e.g. "I trust my coordinator". The reliability of the WAI-SR is strong (Cronbach's alpha = 0.91–0.97) (Hanson et al., 2002), and has been used in both in-patient and outpatient settings (Munder et al., 2010).

4.1.4 Survey Procedure

The survey was developed using Qualtrics software (https://www.qualtrics.com) and contained an integrated information sheet and consent form. Responses were collected between June and September 2022.

4.1.5 Survey Analysis

Partial Least Squares—Structural Equation Modelling (PLS-SEM) was used to analyse the survey data. PLS-SEM is particularly suitable for smaller sample sizes and complex models, as it is a non-parametric method that allows flexibility in including or excluding latent variables or indicators (measured survey items) to improve predictive relevance (Hair et al., 2019). Deductive quantitative methods such as SEM align well with the critical realist stance of the study, as it supports the iterative refinement of theoretical models (Brown et al., 2021; Mukumbang, 2023). The theoretical model was constructed using Smart PLS 4.0 software (Ringle et al., 2022) (see Fig. 5). PLS-SEM does not assume normal data distribution, making it appropriate for a smaller sample size.

Following the "10-times rule," which suggests that the minimum sample size should be 10 times the largest number of structural paths directed at a construct (Hair et al., 2011), the study initially met the requirement with a sample size of 50. However, during the analysis process, one latent variable had to be split into two separate variables, resulting in six structural paths. Given the "10-times rule" in PLS-SEM (Hair et al., 2011), this adjustment meant that an ideal sample size would have been 60 participants. While the actual sample size of 52 fell slightly below this threshold, the robustness of PLS-SEM in handling small sample sizes (Hair et al., 2011, 2019) likely mitigates the impact of this shortfall. Our reflections on sample size are presented in the discussion.

4.2 Results

4.2.1 Measurement Model Assessment

Measurement models are evaluated using (1) indicator loadings (2) internal consistency reliability (3) convergent validity and (4) discriminant validity. Following this, one change was made to the model. As the indicator 'frequency' was inversely loaded (-0.869) on the

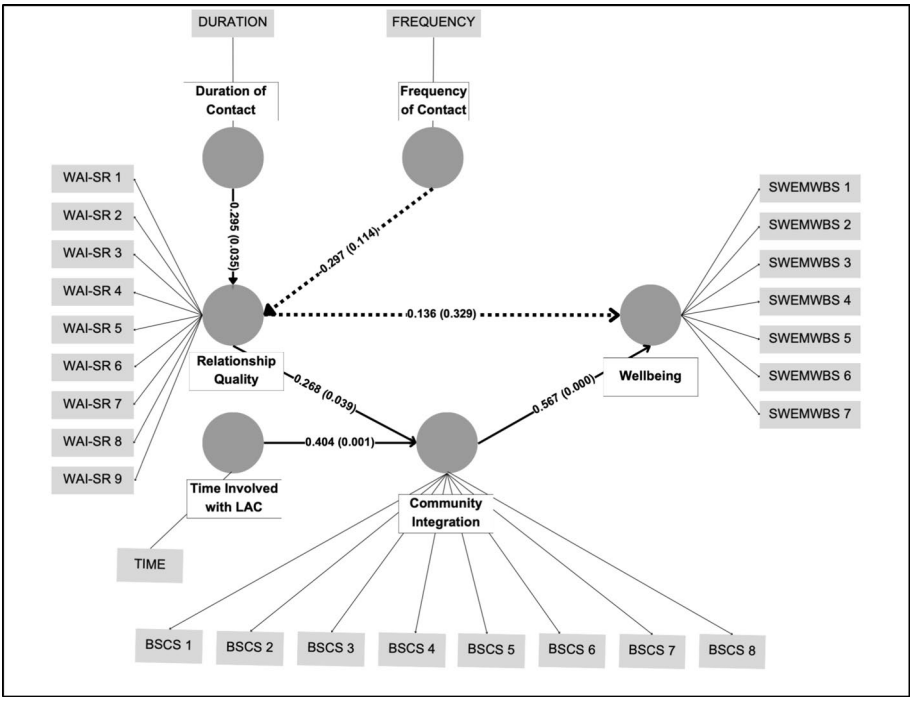

Fig. 4 Final model whereby path coefficients and (p-values) are displayed. Dashed lines represent non-significant pathways; Bold, solid lines reflect significant pathways ($p < 0.05$). WAI-SR refers to Working Alliance Inventory (Relationship Quality). SWEMWBS refers to Warwick Edinburgh Scale (Wellbeing) and BSCS refers to Brief Community Scale (Community Integration)

latent construct of 'Regular Contact with Coordinator', it was removed to form a separate construct in its own name (Frequency of Contact), whilst the construct 'Contact' was changed to 'Duration of Contact' which only contained the one indicator of duration (see Fig. 4).

Analysis of the measurement model indicated satisfactory internal consistency reliability for these composite scores, with composite reliability coefficients ranging from 0.901 to 0.945 across latent constructs. Internal consistency reliability was not assessed for single-item measures, as this approach is only applicable to multi-item scales. The model also demonstrated satisfactory convergent reliability, with all latent constructs achieving an Average Variance Extracted (AVE) between 0.628 and 0.683. Discriminant validity was confirmed, as heterotrait-monotrait (HTMT) ratios of correlations were below the recommended threshold of 0.85. Additional details are provided in Supplementary Materials 3.

4.2.2 Structural Model Assessment

Assessment of the structural model included the following steps: (1) collinearity; (2) R^2 value; (3) Q^2 value; and (4) PLSPredict.

1. Collinearity: Variance inflation factors (VIF) were all below the recommended threshold of 3, suggesting that collinearity was not an issue.

2. R2 Value: R2 values indicate that 38.6% (R2 = 0.386) of the variance in wellbeing can be explained by the model.
3. Q2 Value: The Q2 value, a measure of predictive relevance obtained through the blindfolding procedure, reflects how well the observed values are reconstructed by the model and its parameter estimates. For this study, the Q2 values for the model fell between 0.050 and 0.189, indicating small predictive accuracy. This suggests that while the model explains a fair portion of the variance in wellbeing, its ability to predict new, unseen data is limited.
4. PLSPredict: PLSPredict (Shmueli et al., 2016) is an algorithm in SmartPLS (Ringle et al., 2022) that executes a k-fold cross-validation, splitting the dataset into a given number of folds to evaluate the model's predictive power. For this study, PLSPredict was run on the recommended setting of k = 10 (Hair et al., 2011, 2019). Most indicators (20 out of 22) in the PLS-SEM analysis yielded smaller prediction errors compared to the linear model (LM), indicating medium predictive power. This moderate predictive power suggests that while the model performs better than a simple linear model, there is still room for improvement in its predictive capabilities. This level of predictive power supports the model's utility for theoretical exploration and hypothesis testing but highlights the necessity for further validation and enhancement before it can be applied reliably in practical settings.

The results of the PLS-SEM analysis reveal several significant associations among the variables. Relationship Quality, Community Integration, and Wellbeing exhibited R-square values of 0.264, 0.251, and 0.386, respectively, indicating a moderate level of variance explained by the predictors. Duration of Contact significantly predicted Relationship Quality (T = 2.107, $p = 0.035$), while Frequency of Contact did not (T = 1.581, $p = 0.114$), thus partially supporting H3. Relationship quality significantly predicted Community Integration (T = 2.063, $p = 0.039$), supporting H4, but did not significantly predict Wellbeing (T = 0.976, $p = 0.329$), thus not supporting H5. Time Since first Contact significantly predicted the Community Integration (T = 3.33, $p = 0.001$), supporting H6. Community Integration was a strong predictor of Wellbeing (T = 5.376, $p = 0.000$), supporting H7.

Mediation analysis was also performed to assess the mediating role of Community Integration for the path between Relationship Quality and Wellbeing (see Table 3). No significant indirect effect representing the mediation was observed. H8 was not supported as community integration did not mediate the association between relationship quality and wellbeing.

Table 3 Mediation analysis results

Effect	Coefficient	SE	T Value	P Value	95% CI
Total effects (RQ ⟶ WB)	0.288		1.699	0.089	
Direct effect (RQ ⟶ WB)	0.136		0.976	0.329	
Indirect effect (RQ ⟶ Com ⟶ WB)	0.152	0.081	1.878	0.060	−0.04 to 0.294

5 Study 3: Ripple Effects Mapping

The third study complements the first two by qualitatively exploring the broader impacts of LAC on individual and collective wellbeing. Using Ripple Effects Mapping (REM), this study explores anticipated and unforeseen consequences of LAC, as well as the mechanisms through which LAC operates. By engaging community members, coordinators, and stakeholders, the study provides a holistic understanding of LAC's contributions to wellbeing at multiple levels.

5.1 Methodology

Qualitative data was collected from stakeholders involved in Local Area Coordination (LAC) to explore the impact of LAC on wellbeing and potential underpinning mechanisms. As the qualitative study was exploratory, no a-priori predictions were made.

5.1.1 Design

Ripple Effects Mapping (REM) is a qualitative tool designed to capture the wider impacts of an intervention (Chazdon et al., 2017). It involves four key components; (1) appreciative inquiry (participants share their experience in pairs); (2) a participatory approach; (3) interactive group interviewing and reflection; and (4) "radiant thinking" (mind mapping to visualise the impacts). These components guide a focus group session, where the key impacts are captured on a mind map. Variation three of REM 'Theming and Rippling' was employed in the present study, whereby participants report aloud a few of the most significant effects they discussed during their appreciative inquiry interviews. Impacts are mapped out on a whiteboard and the group collectively summarises the core themes discussed. REM makes use of the Community Capitals Framework (CCF) (Emery & Flora, 2006) as a viewpoint to analyse community changes which occur because of a program. CCF defines seven indicators of a community's "capital:" natural, cultural, human, social, political, and built capitals.

5.1.2 Participants

Participants were either (1) Coordinators employed as Local Area Coordinators working within the Swansea region, or (2) Community members living in Swansea who had any involvement with their local coordinator. The manager of the regional LAC team was also present. There was an overlap of 6 participants between studies one and three. Coordinators were required to have at least one community member who was willing to participate who they could bring with them to the session. In total, 5 coordinators and 7 community members participated. The final sample was all White. Among the Coordinators, there were 1 male, 3 females, and 1 individual whose gender was not specified, aged between 35 and 64 years. They had spent an average of 3.3 years in their roles. The Community Member Participants consisted of 4 females and 3 males, ranging in age from 18 to 80 years old (mean = 45.5 yrs). They had been involved with LAC for an average of approximately 1.64 years.

5.1.3 Procedure

The focus group took place in June 2022 at Swansea University and lasted two hours. Participants firstly completed survey measures with an integrated consent form (see Study 2). Lead author (LW) facilitated the REM process. Definitions of the community capitals framework were printed out and placed on the table to prompt participants to think about all possible impacts of LAC beyond the individual. Participants first interviewed each other in pairs on their experience with LAC. The group then came together, and each participant shared their most significant impacts. Key details were mapped on a whiteboard by the facilitator for everyone to see. The facilitator used probes such as 'what happened next?' or 'what did that lead to?' to capture consequential 'rippling' effects. The group then collectively identified a list of key themes which they felt were common across reflections, leading to the creation of a mind map (see Supplementary Material 4).

5.1.4 Analysis

All data were analysed using ATLAS.ti for Windows (2022). A reflexive approach to thematic analysis (TA) was used to synthesise participants' experiences into meaningful concepts (Braun & Clarke, 2006, 2019, 2022). In line with recommendations (Byrne, 2022), coding was conducted by one researcher in the team (AD), while the first author (LW) later collaborated to sense-check themes and offer alternative interpretations of the data with the aim of developing richer meanings, as opposed to achieving coding consensus. A combination of both deductive and inductive analysis was used. A deductive (top-down) approach was firstly applied, using the GENIAL framework (Kemp & Fisher, 2022; Kemp et al., 2017a, b; Mead et al., 2019, 2021) and The Community Capitals framework (Chazdon et al., 2017; Emery & Flora, 2006) as a lens for interpretation. Secondly, the data was analysed again using an inductive (bottom up) approach to explore the potential mechanisms which arose directly from the participants' data in an exploratory manner. Themes are summarised in Table 4, and further explored in Study three discussion.

5.2 Results

See Table 4.

6 Discussion

The aim of the present study was to employ a mixed method design to (1) determine whether HRV synchrony was present between dyadic pairs and whether this correlated with relationship quality, (2) investigate the pathways associated with community integration using structural equation modelling, and (3) qualitatively explore the impacts of LAC on individual and collective wellbeing using ripple effects mapping.

6.1 Study One Discussion

Our study identified significant physiological synchrony in heart rate and low-frequency (LF) HRV for non-absolute values, indicating in-phase synchrony where cardiac data covaries in the same direction. This suggests the presence of physiological attunement, but its

Table 4 Summary of qualitative themes and example quotes

Theme name	Example quotes	Brief summary
Rapport and Relationship Quality	"My coordinator just always seemed endearing, and he always wanted to help me, and he was always there for me. And that was what I felt was fundamentally important. I wasn't a number; I wasn't a figure" (Participant five)	Importance of rapport between coordinators and community members. Coordinators' non-judgmental attitude and active listening helped establish trust, making participants feel valued, respected, and understood
Personalised Approach	"She [my coordinator] is persistent. But I mean that's brilliant, because to me that's the best thing about her, that she does care." (Participant seven)	Coordinators tailored their approach to individual needs, increasing participants' self-confidence
Personal Growth	"I gained the confidence to just get out there and meet people." (Participant seven) "The breathing and the meditation, and yoga, it helped me get through the beginning when my anxiety kicked in again, it made me look at why it was happening, rather than running from it" (Participant three)	Participation in social groups led to personal growth, positive affect, self-efficacy, and new adaptive coping strategies
Community Integration	"I saw [social group] as a safe place to be for guys to come no matter if you are feeling one hundred percent, we created a space where we were able to come and be like that, struggle but feel accepted" (Participant five)	Opportunities created by LAC for participants to increase their social networks and sense of belonging
Social Support	"I got so much nice company. I can phone them if I am low". "It's just wonderful to me. You know, it's made a big difference, I got so many friends now… I'm not lonely anymore." (Participant one) "I got the support I needed not through one of the formal ways" (Participant three)	Development of new, close, emotionally supportive relationships that provided reassurance and reported reduced reliance on formal healthcare services
Social Equality	"It's [support is usually] all about what you can't do. And that absolutely has not been the case here. It's, it's very much a case of what would you like to do? How can I help you do that? How can I make it achievable?" (Coordinator four)	LAC's role in supporting vulnerable populations to access community resources. Overcoming barriers related to disabilities and mental illness

functional significance remains unclear. LF HRV reflects variability influenced by both sympathetic and parasympathetic activity but should not be interpreted as a direct measure of either branch. Instead, it likely represents a complex interaction of autonomic inputs and regulatory mechanisms, including baroreflex activity (Billman, 2013; Shaffer & Ginsberg, 2017). This complexity underscores the importance of caution when interpreting LF HRV.

Contrary to predictions, physiological synchrony did not correlate with self-reported relationship quality, differing from findings by Tschacher and Meier (2019). This discrepancy may result from social desirability bias, as participants could have inflated their alliance scores due to the coordinator's presence for fear of harming the relationship, supported by the high mean score (38.25/45). Additionally, the small sample size (eight dyads) was designed to explore synchrony presence rather than fully investigate its relationship with wellbeing outcomes, increasing the likelihood of type II error. Thus, definitive conclusions on these relationships should be avoided based on the current dataset.

High-frequency (HF) HRV, primarily reflecting parasympathetic nervous system (PNS) activity (Shaffer & Ginsberg, 2017), showed a negative correlation between HF HRV synchrony and wellbeing. This may indicate that individuals with higher wellbeing rely less on parasympathetic alignment with their coordinators, reflecting greater autonomy in emotional regulation. This aligns with the Interpersonal Synchrony (In-Sync) model (Koole & Tschacher, 2016), which suggests that synchrony shifts based on the individual relational or emotional needs. Those with higher wellbeing may self-regulate more independently, reducing the need for mutual co-regulation.

HRV synchrony research is still in its early stages and is highly complex and context-dependent (Ramseyer, 2020). While the presence of HR and LF HRV synchrony suggests attunement, the lack of correlations with relationship quality or wellbeing highlights the need for further investigation. Future studies should employ larger samples and structural equation modelling (SEM) to explore potential drivers of synchrony, such as empathy, competence, motivation, attachment style, and mutual trust. Research involving diverse dyadic relationships including therapeutic, healthcare, friendships, and romantic partnerships would deepen understanding of the contextual factors underpinning HRV synchrony.

6.2 Study Two Discussion

The findings of Study Two highlight the significant role of relationship quality between community members and their coordinators in predicting community integration ($r = 0.268$). However, relationship quality alone did not significantly predict overall wellbeing. This suggests that the role of the coordinator is to provide a safe and trusted platform, helping individuals access community integration. Community integration, rather than the coordinator relationship itself, appears to drive improvements in wellbeing by fostering new social connections, access to resources, and a sense of belonging. It is easy to see how it would practically be detrimental for community members' wellbeing to be reliant on their attachment to their coordinators as this would likely cause a long-term reliance on LAC provisions. This finding thus aligns with LAC's aim to reduce long-term dependency on coordinators and support individuals in achieving sustainable integration into their communities.

Additionally, the study found that the length of time spent in meetings significantly predicted relationship quality, whereas the frequency of meetings did not. This indicates

that longer, less frequent interactions are more effective in building trust and rapport than shorter, more frequent ones. LAC coordinators reported spending 1–2 h per meeting on average, contrasting with the brief, time-limited appointments typical of formal services. This insight underscores the importance of depth in interactions for fostering meaningful relationships. However, the model's low predictive accuracy limits generalisability and highlights the need for further refinement. Future studies should integrate additional relational factors to improve predictive accuracy and deepen understanding of the mechanisms underpinning relationship quality and wellbeing.

6.3 Study Three Discussion

6.3.1 Theme 1: Rapport and Relationship Quality

Participants emphasised the critical role of rapport between coordinators and community members. This rapport, characterised by a non-judgemental attitude and active listening, fostered trust and a sense of being valued. Participants felt their needs were genuinely cared for, highlighting the importance of coordinators' empathy in building strong, supportive relationships.

6.3.2 Theme 2: Personalised Approach

Coordinators' attention to individual needs was pivotal in boosting participants' self-confidence. This aligns with the process-based approach in positive psychology, which tailors interventions to individual needs (Ciarrochi et al., 2022). Local area coordinators (LAC) could enhance their support through training in positive psychology as they are in an excellent position to foster positive processes. Furthermore, initial participation in groups with coordinators increased self-efficacy. This supports our view that initially attending groups with community members provides assurance and a sense of safety, allowing confidence to be built, and enhancing capacity to integrate. This suggests that a trusted relationship might be a prerequisite for engaging in new behaviours and group activities beyond their comfort zone. This also has implications for healthcare as people can often first require a consistent and trusting individual relationship with a professional before they will agree to change behaviours.

6.3.3 Theme 3: Personal Growth

Participants reported personal growth, such as increased positive affect, meaning and self-efficacy, through social group participation. This aligns with the GENIAL framework's 'balanced mind' domain emphasising the role of building positive emotions, managing difficult emotions and meaning and purpose on wellbeing (Mead et al., 2021). This also highlights the role for autonomous interest in closing the 'intention behaviour gap'. In line with self-determination theory, sustained engagement in behaviour (including adaptive, wellbeing-promoting behaviours) are dependent upon autonomous motivation such as personal interest or perceived value, consistent with three basic psychological needs, autonomy, competence, and relatedness (Deci & Ryan, 2012). Supporting individuals to pursue new ventures, groups, and activities that are intrinsically appealing to them is likely to be

a more effective way of promoting positive behaviours than trying to convince everyone to attend a specific activity, such as a yoga class, regardless of their interest.

6.3.4 Theme 4: Community Integration

LAC created opportunities for participants to increase their social network and as a result, all participants reported feeling less lonely and more socially connected through working with their coordinators. In addition, participants reported an increased sense of belonging by connecting with other community members who shared their values, experiences, and interests. According to the GENIAL framework (Kemp et al., 2017a, b) and social identity theory (Haslam et al., 2008) social ties are a key pathway to health and wellbeing, and these claims are supported by the vast number of findings that people with larger social networks and increased social connectedness have better mental and physical health (Cohen, 2004; Jetten et al., 2009; Uchino et al., 1996). Group membership has even been described as the "social cure" because of its potential to enhance health and wellbeing (Haslam et al., 2018; Jetten et al., 2014).

6.3.5 Theme 5: Social Support

Participants also developed emotionally supportive relationships through LAC. This theme was clustered distinctly from theme 4 'community integration' because in this instance, social support specifically relates to new intimate connections who they could turn to for psychological support. Whilst both forms of social connection are important for wellbeing, we argue they play a slightly different role. A broader sense of belonging to community is essential for social identity, access to resources, cohesive communities and collective resilience (Haslam et al., 2009, 2016; Jetten et al., 2012). Whilst intimate relationships provide a safe space for emotional support (Cohen & Wills, 1985), which wider community belonging may not always allow. Some participants reported that they were less reliant on formal healthcare services because of these new supportive connections, whom they now went to for support during times of difficulty. LAC offers an opportunity to support individuals who might have the fewest opportunities to experience positive relationships yet might benefit from them the most.

6.3.6 Theme 6: Social Equality

LAC can support vulnerable populations in accessing community resources, overcoming barriers such as visual impairment, learning disabilities, and mental illness. Participants described gaining confidence to independently access social groups with the help of their coordinators. Two important factors involved are firstly, the time coordinators spent building trusting relationships and their initial presence during social activities. Individuals from disadvantaged backgrounds are more likely to avoid community-based activities due to nervousness or accessibility issues (Bickerdike et al., 2017; Mossabir et al., 2015). When coordinators initially accompany participants to community groups, they increase the likelihood of independent community integration, helping to reduce these inequalities. These findings align with our past research on community partnerships with the healthcare service. We found that when patients with stroke initially attended community interventions

(surfing) alongside their trusted healthcare professional, this eased anxiety, built their confidence and enabled some patients to continue accessing these activities independently one year later at follow up (Wilkie et al., 2022a, b).

However, systemic inequalities, such as the affordability of health-promoting activities, remain significant barriers. For example, one participant highlighted that their free yoga class in a deprived area was at risk due to expiring grant funding. This underscores the broader issue of the social gradient in health, where lower socio-economic status correlates with poorer health outcomes (Marmot, 2005, 2020, 2024; Steinbeis et al., 2019). Sustainable funding for wellbeing-promoting social groups in deprived areas is essential to reduce healthcare burdens and promote equitable access to community resources.

6.4 Integrated Discussion

The present study provides a comprehensive evaluation of the LAC by integrating findings from physiological measurements, quantitative surveys, and qualitative insights. This general discussion draws on observations and findings from across all three studies, consistent

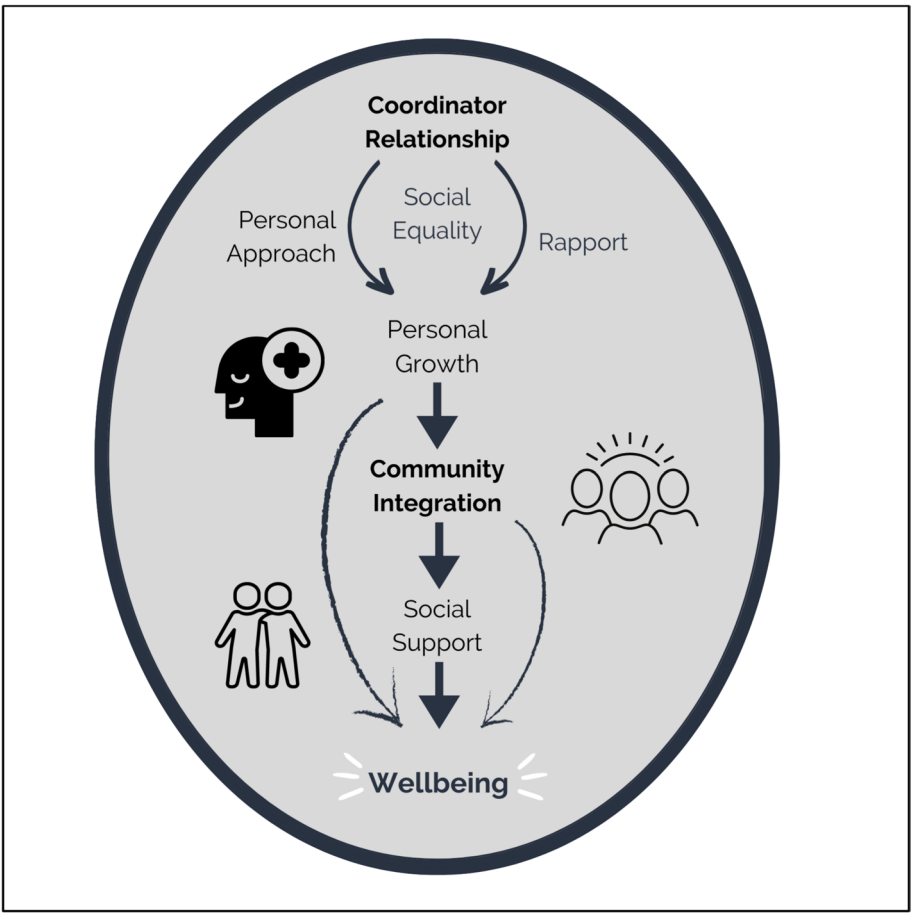

Fig. 5 Visual summary of overall study findings

with a mixed-method concurrent triangulation design approach (Creswell & Clark, 2011). Overall, the findings collectively support the effectiveness of LAC in promoting wellbeing. A visual summary of findings across all three parts of the study is presented in Fig. 5.

6.4.1 Utilising Community Assets

The study highlights the potential for utilising local community assets to provide health and wellbeing interventions, reducing the burden on statutory services. Social groups joined by participants, such as walking groups, community gardens, yoga classes, and nutrition courses, align with the core determinants of wellbeing illustrated in the GENIAL model (Kemp & Fisher, 2022; Mead et al., 2021; Wilkie et al., 2021). The qualitative and quantitative data indicate that community integration is a significant predictor of wellbeing, aligning with the GENIAL framework, which emphasises social connection as critical to health. This integration highlights the importance of strong, supportive relationships and active community involvement as key factors in enhancing wellbeing.

6.4.2 Importance of Relationship Rapport

The findings suggest that fostering a strong rapport between coordinators and community members is crucial for supporting them to make positive changes to their lives. The presence of coordinators while community members initially joined new social groups was particularly beneficial, fostering a sense of safety, enabling social connection, increasing confidence, and supporting future independent community integration.

6.4.3 Coordinator Interaction

The findings suggest that longer, meaningful interactions between coordinators and community members are more effective in building strong relationships than shorter, frequent meetings. This challenges conventional service structures and emphasises the need for depth and quality in interactions to foster trust and rapport.

6.4.4 Physiological Synchrony and Relationship Quality

While physiological synchrony was present between coordinators and community members, it did not correlate with self-reported relationship quality, suggesting that physiological measures alone might not fully capture the complexity of relationship dynamics. Perceived relationship quality may be influenced by additional factors noted in the qualitative data such as empathy and trust.

6.4.5 Addressing Health Inequalities

Qualitative data highlighted the role of LAC in helping individuals overcome barriers related to disability, education, or income, thus promoting more equitable access to community resources. This aspect is crucial in addressing systemic health inequalities.

6.4.6 Strengths, Limitations and Future Research

A limitation of this study is its correlational and cross-sectional design, which prevents causal inferences about LAC's impact on wellbeing. However, as research on LAC is in its early stages, these findings provide valuable insights into its mechanisms and inform future trials. Future evaluations should compare areas where planning or implementation of LAC has commenced with socio-structurally similar areas without LAC to track changes over time and establish causality.

Another limitation of this study is the small sample size, which restricts generalisability. However, PLS-SEM is a non-parametric method capable of handling small samples (Hair et al., 2011). Key paths in the model, such as Community Integration → Wellbeing (coefficient = 0.567, $p < 0.001$), were highly statistically significant, and the strength of this coefficient indicates a meaningful relationship that is unlikely to be substantially impacted by the minor reduction in sample size. Furthermore, the study's explained variance for Wellbeing ($R2 = 0.386$) suggests that the model captures a considerable portion of variance in the outcome, supporting the reliability of the findings despite the slightly smaller-than-ideal sample size. At the same time, the racially homogeneous nature of the sample can be viewed as a strength, providing a clearer lens to examine the intervention's effects within this specific demographic context. This homogeneity reduces variability, allowing for more precise insights that can inform future studies. Future research should include larger and more diverse samples to enhance robustness and test the generalisability of the findings across different demographic contexts.

Despite challenges, the study has several strengths that make it a significant contribution to the literature on community-based approaches to health and social care. Evaluating the impact of large-scale interventions or policies on wellbeing presents several measurement challenges, including conflicting definitions of wellbeing, the complexity of capturing wellbeing's multi-dimensional nature, and the subjective biases inherent in self-reported data. By integrating qualitative, physiological, and survey data, the study adopts an innovative methodological approach that addresses the inherent limitations of any single method. This approach not only strengthens the reliability and validity of the findings but also offers a valuable template for future research evaluating the impacts of community-based interventions.

7 Conclusion

Globally, many countries are now adopting community-based approaches to health and social care as a response to pressing societal challenges including rising chronic conditions, polarisation, and loneliness. Investing in initiatives like Local Area Coordination can address systemic barriers to community access and can foster local social networks through personalised and compassionate engagement with community members. Such approaches have the can help support the transition to sustainable and less strained health and social care systems, enhance social cohesion and contribute to a more inclusive and connected society.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10902-025-00871-x.

Acknowledgements The authors acknowledge the work of Eddie Bartnik and Ralph Broad for their contribution in establishing Local Area Coordination in the UK and working alongside partners to shape and define it. We would like to thank Nick Sinclair and colleagues at the Local Area Coordination Network UK for all their support with the present study. We also thank Jon Franklin, Ronan Ruddy and the Swansea-based coordinators who gave their time to both recruit and participate. We thank the community members in Swansea who were extremely welcoming and shared with us heart-warming stories and Jayne Kinnear, research assistant who supported data collection. We also thank all the coordinators and community members across the UK who participated in this study, without whom this research would not have been possible.

Funding We acknowledge the Research Wales Innovation Fund (RWIF) which granted funding to SR to undertake evaluation on Local Area Coordination.

Data Availability Data that support the findings of this study may be available upon reasonable request from the corresponding authors, LW and AK. The data are not publicly available due to the sensitive nature of this research and potential vulnerability of participants.

Declarations

Conflict of interest PG is the founder of Heartbond Ltd and the developer of the app used to collect synchrony data for this research. PG provided technical support for using the app, offered advice on collecting physiological data and the interpretation of physiological indices. However, PG was not involved in the study design, data collection process, or statistical analysis.

Ethical approval Ethical approval for both quantitative and qualitative components of the present study was obtained from the School of Management Ethics Committee at Swansea University on 5th May 2022 (REF 146).

Informed consent Informed consent was obtained from all participants who took part in this study.

References

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: preliminary data in healthy white women. *Health Psychology, 19*(6), 586–592. https://doi.org/10.1037/0278-6133.19.6.586

Antó, J. M., Martí, J. L., Casals, J., Bou-Habib, P., Casal, P., Fleurbaey, M., Frumkin, H., Jiménez-Morales, M., Jordana, J., Lancelotti, C., Llavador, H., Mélon, L., Solé, R., Subirada, F., & Williams, A. (2021). The planetary wellbeing initiative: Pursuing the sustainable development goals in higher education. *Sustainability, 13*(6), 3372. https://doi.org/10.3390/su13063372

Ballas, D. (2013). What makes a 'happy city'? *Cities, 32*, S39–S50. https://doi.org/10.1016/j.cities.2013.04.009

Bartnik, E., & Broad, R. (2021). *Power and Connection*. Sheffield: Centre for Welfare Reform.

Bickerdike, L., Booth, A., Wilson, P. M., Farley, K., & Wright, K. (2017). Social prescribing: less rhetoric and more reality. A systematic review of the evidence. *British Medical Journal Open, 7*(4), e013384. https://doi.org/10.1136/bmjopen-2016-013384

Billman, G. E. (2013). The LF/HF ratio does not accurately measure cardiac sympatho-vagal balance. *Frontiers in Physiology, 4*, 26. https://doi.org/10.3389/fphys.2013.00026

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health, 11*(4), 589–597. https://doi.org/10.1080/2159676x.2019.1628806

Braun, V., & Clarke, V. (2022). Conceptual and Design Thinking for Thematic Analysis. *Qualitative Psychology, 9*(1), 3–26. https://doi.org/10.1037/qup0000196

Broad, R. (2015). *People, Places, Possibilities*. Sheffield: The Centre for Wellbeing Reform.

Brown, A., Hecker, K. G., Bok, H., & Ellaway, R. H. (2021). Strange bedfellows: exploring methodological intersections between realist inquiry and structural equation modeling. *Journal of Mixed Methods Research, 15*(4), 485–506. https://doi.org/10.1177/1558689820970692

Byrne, D. (2022). A worked example of Braun and Clarke's approach to reflexive thematic analysis. *Quality & Quantity, 56*(3), 1391–1412. https://doi.org/10.1007/s11135-021-01182-y

Chazdon, S., Emery, M., Hansen, D., Higgins, L., & Sero, R. (2017). *A Field Guide to Ripple Effects Mapping*. https://www.researchgate.net/publication/321340208_A_Field_Guide_to_Ripple_Effects_Mapping

Ciarrochi, J., Hayes, S. C., Oades, L. G., & Hofmann, S. G. (2022). Toward a unified framework for positive psychology interventions: Evidence-based processes of change in coaching, prevention, and training. *Frontiers in Psychology, 12*, 809362. https://doi.org/10.3389/fpsyg.2021.809362

Cohen, S. (2004). Social relationships and health. *American Psychologist, 59*(8), 676–684. https://doi.org/10.1037/0003-066x.59.8.676

Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin, 98*(2), 310–357. https://doi.org/10.1037/0033-2909.98.2.310

Coutinho, J., Pereira, A., Oliveira-Silva, P., Meier, D., Lourenço, V., & Tschacher, W. (2021). When our hearts beat together: Cardiac synchrony as an entry point to understand dyadic co-regulation in couples. *Psychophysiology, 58*(3), e13739. https://doi.org/10.1111/psyp.13739

Creswell, J., & Clark, V. P. (2011). *Choosing a mixed methods design: Designing and conducting mixed methods research* (2nd ed.). Washington: Sage.

Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-methods research: A discussion on its types, challenges, and criticisms. *Journal of Practical Studies in Education, 2*(2), 25–36. https://doi.org/10.46809/jpse.v2i2.20

Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of Theories of Social Psychology* (pp. 416–436). London: Sage. https://doi.org/10.4135/9781446249215.n21

Emery, M., & Flora, C. (2006). Spiraling-up: Mapping community transformation with community capitals framework. *Community Development, 37*(1), 19–35. https://doi.org/10.1080/15575330609490152

Fat, L. N., Scholes, S., Boniface, S., Mindell, J., & Stewart-Brown, S. (2017). Evaluating and establishing national norms for mental wellbeing using the short Warwick-Edinburgh Mental Well-being Scale (SWEMWBS): Findings from the Health Survey for England. *Quality of Life Research, 26*(5), 1129–1144. https://doi.org/10.1007/s11136-016-1454-8

Fatisson, J., Oswald, V., & Lalonde, F. (2016). Influence diagram of physiological and environmental factors affecting heart rate variability: An extended literature overview. *Heart International, 11*(1), e32–e40. https://doi.org/10.5301/heartint.5000232

Gilgen-Ammann, R., Schweizer, T., & Wyss, T. (2019). RR interval signal quality of a heart rate monitor and an ECG Holter at rest and during exercise. *European Journal of Applied Physiology, 119*(7), 1525–1532. https://doi.org/10.1007/s00421-019-04142-5

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139–152. https://doi.org/10.2753/mtp1069-6679190202

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), 2–24. https://doi.org/10.1108/ebr-11-2018-0203

Hanson, W. E., Curry, K. T., & Bandalos, D. L. (2002). Reliability generalization of working alliance inventory scale scores. *Educational and Psychological Measurement, 62*(4), 659–673. https://doi.org/10.1177/0013164402062004008

Haslam, A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health and well-being: An emerging agenda for applied psychology. *Applied Psychology, 58*(1), 1–23. https://doi.org/10.1111/j.1464-0597.2008.00379.x

Haslam, C., Holme, A., Haslam, S. A., Iyer, A., Jetten, J., & Williams, W. H. (2008). Maintaining group memberships: Social identity continuity predicts well-being after stroke. *Neuropsychological Rehabilitation, 18*(5–6), 671–691. https://doi.org/10.1080/09602010701643449

Haslam, C., Cruwys, T., Haslam, S. A., Dingle, G., & Chang, M. X. L. (2016). Groups 4 Health: Evidence that a social-identity intervention that builds and strengthens social group membership improves mental health. *Journal of affective disorders, 194*, 188–195.

Haslam, C., Jetten, J., Cruwys, T., Dingle, G., & Haslam, A. (2018). *The new psychology of health*. Milton Park: Routledge.

Hayanga, B., Stafford, M., & Bécares, L. (2023). Ethnic inequalities in multiple long-term health conditions in the United Kingdom: A systematic review and narrative synthesis. *BMC Public Health, 23*(1), 178. https://doi.org/10.1186/s12889-022-14940-w

Heartbond. (2022). *Heartbond Local* [Mobile app]. Heartbond. Heartbond.co.uk.

House of Commons Library. (2023). *Mental health statistics: Prevalence, services, and funding in England (Research Briefing No. SN06988)*. Retrieved from https://researchbriefings.files.parliament.uk/documents/SN06988/SN06988.pdf

Jetten, J., Haslam, C., Haslam, S. A., & Branscombe, N. R. (2009). The social cure. *Scientific American Mind, 20*(5), 26–33. https://doi.org/10.1038/scientificamericanmind0909-26

Jetten, J., Haslam, C., & Alexander, S. H. (2012). The social cure: Identity, health and well-being. Psychology press.

Jetten, J., Haslam, C., Haslam, S. A., Dingle, G., & Jones, J. M. (2014). How groups affect our health and well-being: The path from theory to policy. *Social Issues and Policy Review, 8*(1), 103–130. https://doi.org/10.1111/sipr.12003

Kawachi, I., Kennedy, B. P., & Glass, R. (1999). Social capital and self-rated health: A contextual analysis. *American Journal of Public Health, 89*(8), 1187–1193. https://doi.org/10.2105/ajph.89.8.1187

Kawachi, I., Kennedy, B. P., Lochner, K., & Prothrow-Stith, D. (1997). Social capital, income inequality, and mortality. *American Journal of Public Health, 87*(9), 1491–1498. https://doi.org/10.2105/ajph.87.9.1491

Kemp, A., Arias, J. A., & Fisher, Z. (2017a). Neuroscience and Social Science. *The Missing Link*. https://doi.org/10.1007/978-3-319-68421-5_17

Kemp, A., & Edwards, D. (2022). *Broadening the scope of wellbeing science* (Vol. 1). Cham: Springer. https://doi.org/10.1007/978-3-031-18329-4

Kemp, A. H., & Fisher, Z. (2022). Wellbeing, whole health and societal transformation: Theoretical insights and practical applications. *Global Advances in Health and Medicine, 11*, 21649561211073076. https://doi.org/10.1177/21649561211073077

Kemp, A. H., Koenig, J., & Thayer, J. F. (2017b). From psychological moments to mortality: A multidisciplinary synthesis on heart rate variability spanning the continuum of time. *Neuroscience & Biobehavioral Reviews, 83*, 547–567. https://doi.org/10.1016/j.neubiorev.2017.09.006

Kern, M. L., Williams, P., Spong, C., Colla, R., Sharma, K., Downie, A., Taylor, J. A., Sharp, S., Siokou, C., & Oades, L. G. (2020). Systems informed positive psychology. *The Journal of Positive Psychology, 15*(6), 705–715. https://doi.org/10.1080/17439760.2019.1639799

Kingston, A., Robinson, L., Booth, H., Knapp, M., & Jagger, C. (2018). Projections of multi-morbidity in the older population in England to 2035: Estimates from the Population Ageing and Care Simulation (PACSim) model. *Age and Ageing, 47*(3), 374–380. https://doi.org/10.1093/ageing/afx201

Koole, S. L., & Tschacher, W. (2016). Synchrony in psychotherapy: A review and an integrative framework for the therapeutic alliance. *Frontiers in Psychology, 7*, 862. https://doi.org/10.3389/fpsyg.2016.00862

Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & Quantity, 43*(2), 265–275. https://doi.org/10.1007/s11135-007-9105-3

Lomas, T., Medina, J. C., Ivtzan, I., Rupprecht, S., & Eiroa-Orosa, F. J. (2019). Mindfulness-based interventions in the workplace: An inclusive systematic review and meta-analysis of their impact upon wellbeing. *The Journal of Positive Psychology, 14*(5), 625–640. https://doi.org/10.1080/17439760.2018.1519588

Lomas, T., Waters, L., Williams, P., Oades, L. G., & Kern, M. L. (2020). Third wave positive psychology: Broadening towards complexity. *The Journal of Positive Psychology*. https://doi.org/10.1080/17439760.2020.1805501

Lowther-Payne, H. J., Ushakova, A., Beckwith, A., Liberty, C., Edge, R., & Lobban, F. (2023). Understanding inequalities in access to adult mental health services in the UK: A systematic mapping review. *BMC Health Services Research, 23*(1), 1042. https://doi.org/10.1186/s12913-023-10030-8

Lunt, N., Bainbridge, L., & Rippon, S. (2021). Strengths, assets and place—The emergence of local area coordination initiatives in England and Wales. *Journal of Social Work, 21*(5), 1041–1064. https://doi.org/10.1177/1468017320918174

Marmot, M. (2005). Social determinants of health inequalities. *The Lancet, 365*(9464), 1099–1104. https://doi.org/10.1016/s0140-6736(05)71146-6

Marmot, M. (2020). Health equity in England: The Marmot review 10 years on. *BMJ, 368*, m693. https://doi.org/10.1136/bmj.m693

Marmot, M. (2024). We know what we need to do to improve health and reduce inequalities, now we need politicians to act. *BMJ, 384*, q93. https://doi.org/10.1136/bmj.q93

Mason, J., Oatley, C., Harris, K., & Ryan, L. (2021). How and why does Local Area Coordination work for people in different contexts? *Methodological Innovations*. https://doi.org/10.1177/2059799120985381

McCay, L. (2022). Why a health inequalities white paper is still so vital and should not be scrapped. *BMJ, 378*, o2369. https://doi.org/10.1136/bmj.o2369

Mead, J., Fisher, Z., & Kemp, A. H. (2021). Moving beyond disciplinary silos towards a transdisciplinary model of wellbeing: An invited review. *Frontiers in Psychology, 12*, 642093. https://doi.org/10.3389/fpsyg.2021.642093

Mead, J., Fisher, Z., Wilkie, L., Gibbs, K., Pridmore, J., Tree, J., & Kemp, A. (2019). Rethinking wellbeing: Toward a more ethical science of wellbeing that considers current and future generations. *Authorea*. https://doi.org/10.22541/au.156649190.08734276

Mossabir, R., Morris, R., Kennedy, A., Blickem, C., & Rogers, A. (2015). A scoping review to understand the effectiveness of linking schemes from healthcare providers to community resources to improve the health and well-being of people with long-term conditions. *Health & Social Care in the Community, 23*(5), 467–484. https://doi.org/10.1111/hsc.12176

Mukumbang, F. C. (2023). Retroductive theorizing: A contribution of critical realism to mixed methods research. *Journal of Mixed Methods Research, 17*(1), 93–114. https://doi.org/10.1177/15586898211049847

Munder, T., Wilmers, F., Leonhart, R., Linster, H. W., & Barth, J. (2010). Working Alliance Inventory-Short Revised (WAI-SR): Psychometric properties in outpatients and inpatients. *Clinical Psychology & Psychotherapy, 17*(3), 231–239. https://doi.org/10.1002/cpp.658

Musikanski, L., Cloutier, S., Bejarano, E., Briggs, D., Colbert, J., Strasser, G., & Russell, S. (2017). Happiness Index Methodology. *Journal of Social Change*. https://doi.org/10.5590/josc.2017.09.1.02

Oades, L. G., Robinson, P., Green, S., & Spence, G. B. (2011). Towards a positive university. *The Journal of Positive Psychology, 6*(6), 432–439. https://doi.org/10.1080/17439760.2011.634828

Office for National Statistics (ONS) (2023) *Rising ill-health and economic inactivity because of long-term sickness.* Retrieved from https://www.ons.gov.uk

Peterson, N. A., Speer, P. W., & McMillan, D. W. (2008). Validation of A brief sense of community scale: Confirmation of the principal theory of sense of community. *Journal of Community Psychology, 36*(1), 61–73. https://doi.org/10.1002/jcop.20217

Ramseyer, F. T. (2020). Exploring the evolution of nonverbal synchrony in psychotherapy: The idiographic perspective provides a different picture. *Psychotherapy Research, 30*(5), 622–634. https://doi.org/10.1080/10503307.2019.1676932

Ringle, C., Wende, S., & Becker, J.-M. (2022). *SmartPLS* (Version 4). https://www.smartpls.com

Roderick, S., Gareth, Jayne, & Gregory, J. (2016). *Local Community Initiatives in Western Bay*. https://lacnetwork.org/wp-content/uploads/2017/04/FINAL-Local-Area-Coordination-Evaluation-Report-2017.pdf

Salo, M. A., Huikuri, H. V., & Seppanen, T. (2001). Ectopic beats in heart rate variability analysis: Effects of editing on time and frequency domain measures. *Annals of Noninvasive Electrocardiology, 6*(1), 5–17. https://doi.org/10.1111/j.1542-474x.2001.tb00080.x

Seligman, M. (2011). *Flourish: A visionary new understanding of happiness and well-being*. London: Free Press.

Shaffer, F., & Ginsberg, J. P. (2017). An overview of heart rate variability metrics and norms. *Frontiers in Public Health, 5*, 258. https://doi.org/10.3389/fpubh.2017.00258

Shmueli, G., Ray, S., Estrada, J. M. V., & Chatla, S. B. (2016). The elephant in the room: Predictive performance of PLS models. *Journal of Business Research, 69*(10), 4552–4564. https://doi.org/10.1016/j.jbusres.2016.03.049

Steinbeis, F., Gotham, D., von Philipsborn, P., & Stratil, J. M. (2019). Quantifying changes in global health inequality: The Gini and Slope Inequality Indices applied to the Global Burden of Disease data, 1990–2017. *BMJ Global Health, 4*(5), e001500. https://doi.org/10.1136/bmjgh-2019-001500

Theeboom, T., Beersma, B., & van Vianen, A. E. M. (2014). Does coaching work? A meta-analysis on the effects of coaching on individual level outcomes in an organizational context. *The Journal of Positive Psychology, 9*(1), 1–18. https://doi.org/10.1080/17439760.2013.837499

Tschacher, W., & Haken, H. (2019). *The process of psychotherapy: Causation and chance* (1st ed.). Springer: Berlin.

Tschacher, W., & Meier, D. (2019). Physiological synchrony in psychotherapy sessions. *Psychotherapy Research, 30*(5), 558–573. https://doi.org/10.1080/10503307.2019.1612114

Uchino, B. N., Cacioppo, J. T., & Kiecolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin, 119*(3), 488–531. https://doi.org/10.1037/0033-2909.119.3.488

Waters, L., Cameron, K., Nelson-Coffey, S. K., Crone, D. L., Kern, M. L., Lomas, T., Oades, L., Owens, R. L., Pawelski, J. O., Rashid, T., Warren, M. A., White, M. A., & Williams, P. (2022). Collective wellbeing and posttraumatic growth during COVID-19: How positive psychology can help families, schools, workplaces and marginalized communities. *The Journal of Positive Psychology, 17*(6), 761–789. https://doi.org/10.1080/17439760.2021.1940251

Waverijn, G., Heijmans, M., & Groenewegen, P. P. (2017). Neighbourly support of people with chronic illness; is it related to neighbourhood social capital? *Social Science & Medicine, 173*, 110–117. https://doi.org/10.1016/j.socscimed.2016.12.004

Waverijn, G., Wolfe, M. K., Mohnen, S., Rijken, M., Spreeuwenberg, P., & Groenewegen, P. (2014). A prospective analysis of the effect of neighbourhood and individual social capital on changes in self-rated health of people with chronic illness. *BMC Public Health, 14*(1), 675. https://doi.org/10.1186/1471-2458-14-675

Wilkie, L., Arroyo, P., Conibeer, H., Kemp, A. H., & Fisher, Z. (2021). The impact of psycho-social interventions on the wellbeing of individuals with acquired brain injury during the COVID-19 pandemic. *Frontiers in Psychology, 12*, 648286. https://doi.org/10.3389/fpsyg.2021.648286

Wilkie, L., Fisher, Z., & Kemp, A. H. (2022a). The 'rippling'waves of wellbeing: A mixed methods evaluation of a surf-therapy intervention on patients with acquired brain injury. *Sustainability, 14*(15), 9605.

Wilkie, L., Fisher, Z., & Kemp, A. H. (2022b). The complex construct of wellbeing and the role of vagal function. *Frontiers in Integrative Neuroscience, 16*, 925664. https://doi.org/10.3389/fnint.2022.925664

Williams, A. J., Maguire, K., Morrissey, K., Taylor, T., & Wyatt, K. (2020). Social cohesion, mental wellbeing and health-related quality of life among a cohort of social housing residents in Cornwall: A cross sectional study. *BMC Public Health, 20*(1), 985. https://doi.org/10.1186/s12889-020-09078-6

Authors and Affiliations

Lowri Wilkie[1] · Sian Roderick[4] · Zoe Fisher[2,3,6] · Alina Dray[1] · Peter Granger[5] · Andrew H. Kemp[1]

✉ Lowri Wilkie
lowriwilkie@gmail.com

✉ Andrew H. Kemp
a.h.kemp@swansea.ac.uk

[1] School of Psychology, Faculty of Medicine, Health and Life Sciences, Swansea University, Swansea, UK

[2] West Glamorgan Regional Partnership Board, Civic Centre, Swansea, UK

[3] Health and Wellbeing Academy, Swansea University, Swansea, UK

[4] School of Management, Swansea University, Swansea, UK

[5] Heartbond Ltd, Dunmow, UK

[6] Strategy Directorate, Swansea Bay University Health Board, Baglan HQ, Baglan, Port Talbot, UK