

Dimensions of group home culture as predictors of quality of life outcomes

Lincoln Humphreys  | Christine Bigby  | Teresa Iacono 

Living with Disability Research Centre, La Trobe University, Bundoora, Vic., Australia

Correspondence

Lincoln Humphreys, Living with Disability Research Centre, La Trobe University, Bundoora, Victoria 3086 Australia.
Email: L.Humphreys@latrobe.edu.au

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Abstract

Background: Research has shown that there is variability in quality of life (QOL) outcomes for people with intellectual disabilities who live in group homes. The aim was to examine dimensions of group home culture as predictors of QOL outcomes.

Method: The Group Home Culture Scale (GHCS) was used to measure staff perceptions of culture in 23 group homes. QOL data were available from 98 people with intellectual disabilities. Multilevel modelling was used to examine the associations between the GHCS subscales and four QOL-dependent variables.

Results: Of the GHCS subscales, Effective Team Leadership and Alignment of Staff with Organizational Values significantly predicted residents' engagement in activities. Supporting Well-Being significantly predicted residents' community involvement. None of the GHCS subscales significantly predicted domestic participation and choice making.

Conclusions: The findings suggest that strategies to improve Effective Team Leadership and Supporting Well-Being dimensions of culture may contribute to enhancing certain QOL outcomes.

KEYWORDS

group home, intellectual disability, organizational culture, quality of life, service delivery, supported accommodation

1 | INTRODUCTION

Deinstitutionalization in Australia and other countries, such as England, Sweden and the United States (Mansell, Beadle-Brown, & Special Interest Research Group, 2010), has changed not only where, but also how people with intellectual disabilities live. Studies into the impact on people with intellectual disabilities of moving from institutions to group homes (i.e. community-based accommodation for 3–8 people, with 24 hr support available) demonstrate that they typically experience better quality of life (QOL) outcomes living in group homes (Kozma, Mansell, & Beadle-Brown, 2009). They have

been found, for example, to experience greater levels of engagement in activities, participation in the community and choice making when living in group homes (Emerson & Hatton, 1996; Kozma et al., 2009). The concept of QOL has influenced both research into and delivery of supported accommodation services for people with intellectual disabilities as a measurable and valued outcome (Schalock, Verdugo, Gomez, & Reinders, 2016). Of relevance to measuring QOL, Schalock et al. (2002) proposed that it is a multidimensional construct influenced by personal and environmental factors, with subjective and objective components.

Although research into deinstitutionalization has shown that QOL outcomes are generally better for people with intellectual

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disabilities living in group homes than in institutions, variability across individuals has also been found (Emerson & Hatton, 1996; Kozma et al., 2009). Similar variability has been found in studies focused on group homes only (Bigby, Bould, & Beadle-Brown, 2019; Perry & Felce, 2003). This variability indicates that there are people with intellectual disabilities who experience poor QOL and across group homes there can be considerable differences in service quality.

Researchers have argued that understanding the predictors of variability in outcomes could reveal factors that can enhance the provision of group home services and residents' QOL (Walsh et al., 2010). The level of group home residents' adaptive behaviour and staff support practices, in particular Active Support, have been found to be the strongest predictors of QOL (Bigby & Beadle-Brown, 2018; Mansell, 2006). Active Support is a way of staff supporting people with intellectual disabilities to engage in meaningful activities and relationships (Mansell & Beadle-Brown, 2012).

Other variables thought to be predictive of residents' QOL (e.g. staff characteristics, resources) have been examined, but with inconclusive research evidence (Bigby & Beadle-Brown, 2018). Organizational culture may be a predictive factor (Bigby & Beadle-Brown, 2018), but few studies have been conducted in group homes. On the other hand, studies into the relationship between organizational culture and performance have been more frequently conducted in the business sector (see Hartnell, Ou, & Kinicki, 2011) and health care (see Mannion, Davies, & Marshall, 2005). Culture refers to shared values, beliefs, norms and patterns of behaviour that influence how staff think, feel and act (Ott, 1989; Trice & Beyer, 1993).

The findings from the studies conducted in group homes suggest that organizational culture accounted for differences in QOL outcomes across people with intellectual disabilities. In the first study, Gillett and Stenfert-Kroese (2003) compared two residential units from the same organization. They found that the residential unit with the more positive culture, as measured on the Organizational Culture Inventory, had higher QOL outcomes. More recently, Bigby and colleagues (Bigby & Beadle-Brown, 2016; Bigby, Knox, Beadle-Brown, Clement, & Mansell, 2012) conducted two ethnographic studies of five underperforming and three better performing group homes for people with severe intellectual disabilities. They identified five dimensions of organizational culture in group homes. Comparisons between the studies highlighted differences in culture between the underperforming and better performing group homes. Bigby, Knox, Beadle-Brown, and Bould (2014) found that the residents who lived in the group homes with more positive cultures experienced higher QOL outcomes than their counterparts in group homes with less positive cultures.

Although suggestive of organizational culture accounting for differences in residents' QOL outcomes, the design of these previous studies (Bigby & Beadle-Brown, 2016; Bigby et al., 2014; Bigby et al., 2012; Gillett & Stenfert-Kroese, 2003) precluded determining whether culture predicts QOL outcomes. Finding a way to statistically test for a predictive relationship between culture and QOL outcomes would offer the potential to develop strategies to enhance

service delivery and residents' QOL. Building on Bigby and colleagues' (Bigby & Beadle-Brown, 2016; Bigby et al., 2012) proposed dimensions of group home culture, Humphreys, Bigby, Iacono, and Bould (2020) developed the Group Home Culture Scale (GHCS) to provide a quantitative measure of staff perceptions of group home culture. The GHCS comprises seven dimensions and provides a means to examine the relationship between culture and residents' QOL outcomes.

The purpose of this study was to determine whether dimensions of group home culture, as measured on the GHCS, predict residents' QOL outcomes. The research question was: Are dimensions of culture predictors of QOL outcomes for people with intellectual disabilities who live in group homes? The GHCS subscales were hypothesized to be positively associated with the QOL-dependent variables.

2 | METHOD

2.1 | Design

A cross-sectional survey was conducted of group homes for people with intellectual disabilities. An exploratory, multivariate correlational research design was used.

2.2 | Participants

Participants were a sub-sample from a larger longitudinal study (see Bigby et al., 2019) into the implementation and maintenance of Active Support in supported accommodation services in non-government organizations operating across Australia. Five organizations from the longitudinal study participated in the current study.

Across the five organizations, 23 group homes were identified as meeting the inclusion criterion. They accommodated adults with intellectual disabilities and staff generally provided the residents with 24 hr support. Staff who had worked in the participating group homes for less than 2 months and/or worked, on average, less than 4 hr per week were excluded.

Participants were 98 people with intellectual disabilities, 86 disability support workers (DSWs) and 21 front-line supervisors ($n = 107$ staff) from the 23 group homes. The mean age of participants with intellectual disabilities was 42.9 years ($SD = 13.7$, range = 19–79) and 54.1% were female. The mean score on the Short Adaptive Behavior Scale (SABS; Hatton et al., 2014) was 136.87 ($SD = 70.25$, range = 21.98–260.34), indicating that, on average, participants had more severe disabilities, although there was large variability across them. The mean number of residents per group home was 4.7 (range = 3–7). Staff participants were, on average, 45.5 years of age ($SD = 12.2$, range = 20–69), 65.1% were female and 60.4% were born in Australia. Most participants had a Technical and Further Education Certificate 4 (31.7%; i.e. a vocational college qualification) or a Diploma (25%) as their highest level of education. Staff participants worked on a full-time (46.8%), part-time (46%) or

TABLE 1 Descriptions and example items for the group home culture scale

Subscale	Description	Example Item
1. Supporting Well-Being	The extent to which staff members' shared ways of working are directed towards enhancing the well-being of each resident.	Staff provide residents with opportunities and support to make everyday choices.
2. Factional	The extent to which there are divisions within the staff team that have a detrimental influence on team dynamics.	Some staff do not cooperate with the rest of the team.
3. Effective Team Leadership	The extent to which the front-line supervisor engages in leadership practices that transmits and embeds the culture.	The front-line supervisor clearly explains to staff what the aims of this group home are.
4. Collaboration within the Organization	The extent to which staff have a positive perception of organizational support and priorities.	There is regular communication between staff in this group home and the senior managers of this organization.
5. Social Distance from Residents	The extent to which there is social distance between staff and residents, where staff regard the residents to be fundamentally different from themselves.	Staff believe that in many ways the residents are like children.
6. Valuing Residents and Relationships	The extent to which staff value the residents and the relationships they have with them.	Staff value the relationships they have developed with the residents.
7. Alignment of Staff with Organizational Values	The extent to which staff members' values align with the espoused values of the organization.	The organization's core values guide how staff support the residents.

casual basis (7.2%). Most participants had more than 3 years' experience working in their respective group homes (61.7%).

2.3 | Ethics approval

La Trobe University Human Research Ethics Committee approved the study. Participant information statements were provided to staff, and implicit informed consent was obtained through return of completed questionnaires. Written consent was obtained from participants with intellectual disabilities, or for those without consent capacity, it was provided on their behalf from their next-of-kin or guardian.

2.4 | Measures

2.4.1 | Group home culture scale (GHCS)

The GHCS¹ (Humphreys, 2018) comprises 46 items which are rated on a 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5). It is completed by front-line staff; supervisors and DSWs complete slightly different versions: for seven items, front-line supervisors self-report about their leadership; for the equivalent items, DSWs report on their front-line supervisor's leadership. The GHCS measures staff perceptions of culture according to seven dimensions. Table 1 presents descriptions and example items for each of the dimensions. Humphreys (2018) reported

good internal consistency for each of the subscales (Cronbach's α range = 0.81–0.92).

To calculate scores for each subscale for each group home, negatively phrased items are reverse scored. Scores for each staff participant are calculated by dividing the sum of item ratings by the number of items in the subscale. Next, scores for each group home are aggregated by averaging subscale scores across team members. Subscale scores can range from 1.00 to 5.00, with higher scores indicating more positive perceptions of the culture.

2.4.2 | Demographic and employment information

Information about staff respondents was collected using a questionnaire comprising 17 closed questions. Questions addressed key demographic information, including experience in disability accommodation services, and frequency of contact with other staff. This questionnaire appeared at the end of the GHCS.

2.4.3 | The short adaptive behavior scale (SABS)

The SABS (Hatton et al., 2001) consists of 24 items comprising three subscales: personal self-sufficiency, community self-sufficiency and personal-social responsibility. It is completed by a staff member who knows the resident well. Subscale scores are combined and converted into a full score (see Hatton et al., 2001), with higher scores corresponding to higher levels of adaptive behaviour. In previous research, SABS scores below 151 have been interpreted as indicating more severe disabilities (Beadle-Brown et al., 2016;

¹The GHCS was originally developed as part of a doctoral thesis and comprised 46 items (see Humphreys, 2018). Data for the present study were collected using this version of the GHCS. A revised 48 item version of the GHCS was published by Humphreys et al. (2020).

Mansell, Beadle-Brown, & Bigby, 2013). Hatton et al. (2001) reported good internal consistency for the SABS (Cronbach's α range = 0.96–0.97).

2.4.4 | The index of community involvement (ICI)

A modified version of the ICI (Raynes, Wright, Shiell, & Pettipher, 1994) was used to measure participation in social and leisure activities in the community. It consists of 16 yes/no items about whether the resident has been to certain places in the community or involved in social activities in the past month and on a holiday in the past 12 months. The ICI is completed by a staff member who knows the resident well. Scores are summed and converted to percentages, with higher values indicating participation in a wider variety of activities. Raynes et al. (1994) reported a Cronbach's alpha of 0.70 for the ICI.

2.4.5 | The index of participation in domestic life (IPDL)

The IPDL (Raynes et al., 1994) was used to measure residents involvement in domestic tasks. A staff member who knows the resident well completes it. The IPDL comprises 13 items and respondents indicate on a 3-point scale whether the resident performs each domestic task (e.g. "preparing meals" and "cleaning own bedroom") independently (=2), with help (=1) or not at all (=0). Scores are summed and converted to percentages, with higher values indicating greater participation. Raynes and Sumpton (as cited in Raynes et al., 1994) reported a Cronbach's alpha of 0.90 for the IPDL.

2.4.6 | The choice making scale (CMS)

The CMS (Conroy & Feinstein, 1986) measures the extent to which residents make choices about food, personal space, clothes, when daily activities occur, recreation and other aspects (e.g. "How to spend own money"). The 24 items are rated on a 4-point scale from 1 (*no opportunities*) to 4 (*yes, opportunities all of the time*). A staff member who knows the resident well completes the CMS. Summed scores are converted to percentages, with higher values indicating greater choice. Raynes et al. (1994) reported a Cronbach's alpha of 0.96 for the CMS.

2.4.7 | Observed engagement in meaningful activity and relationships (EMAC-R)

The EMAC-R (Mansell & Beadle-Brown, 2005) is an observational measure of engagement in meaningful activities and relationships. Using momentary time sampling, residents are observed in rotating 5 min blocks during a 2 hr period, with coding occurring at 1 min

intervals. Coding is of three activity (social, non-social and unclear non-social) and four challenging behaviour categories (aggressive or destructive behaviour, self-injurious behaviour, self-stimulatory or repetitive behaviour, and other). Contact directly received by the resident from staff and others is coded according to assistance to engage in meaningful activity and other non-assistance contact. Multiple categories can be coded in the same interval, or "none" if none of the coded behaviours occur. If the resident is unobservable at the 1 min interval, the researcher records "missed". Percentage of time engaged in activities is calculated using the three activity categories, adjusted for missed observations.

2.4.8 | The active support measure (ASM)

The ASM (Mansell, Elliott, & Beadle-Brown, 2005) was used as an index of the quality of Active Support staff provided to residents. It is completed by researchers following the 2 hr EMAC-R observations. It consists of 15 items, which are rated on a scale of 0 (*poor, inconsistent support/performance*) to 3 (*good, consistent support/performance*). The highest possible score is 45, except when two items about challenging behaviour are unobserved (highest score = 39). Scores are converted to percentages. In previous research (Beadle-Brown et al., 2016; Mansell et al., 2013), ASM scores of 66.67% and greater have been interpreted as good support, 33.33%–66.66% as mixed, and less than 33.33% as weak. Mansell, Beadle-Brown, Macdonald, and Ashman (2003) reported a Cronbach's alpha of 0.92 for the ASM.

2.5 | Procedures

Staff questionnaire packets were sent to a contact person at each organization for distribution to staff in the group homes. To match completed questionnaires to the group homes, respondents wrote the address of the group home in which they worked on their questionnaires. Completed questionnaires were returned to the researchers in provided prepaid envelopes.

In separate distribution, resident questionnaires were sent to the group homes for completion by staff who knew the individual well and acted as proxy respondents. They comprised a section on resident characteristics, the SABS and three measures of QOL: the ICI, IPDL and CMS. Completed questionnaires either were mailed back to the researchers in provided prepaid envelopes or collected by researchers at the observation visits.

Two trained researchers collected observation data through non-participant observations of residents in their homes. The observations took place on weekday afternoons from 16:00 to 18:00 and in public areas of the homes. Acceptable levels of interobserver reliability between the two researchers were found for the EMAC-R (mean kappa across the categories = 0.81). No significant differences were found between the two researchers for ASM total scores, $t(5) = 1.65$, $p = .16$. Data were collected from March to November 2016.

3 | ANALYSES

3.1 | Preliminary

Data were entered into SPSS 24 and checked for entry errors and missing values. Descriptive statistics for the sample were calculated.

3.2 | Aggregation

The appropriateness of aggregating the individual level GHCS data to the group home (staff team) level was assessed using $r_{WG(j)}$, ICC(1) and ICC(2) (LeBreton & Senter, 2008). These analyses were conducted using a Microsoft Excel tool developed by Biemann, Cole, and Voelpel (2012).

The $r_{WG(j)}$ provided an index of within group agreement. For each GHCS subscale, an $r_{WG(j)}$ value was calculated for each staff group (team), and a mean value across the groups was calculated. Values for the $r_{WG(j)}$ index range from 0 to 1: a higher value indicates a higher degree of within group agreement (LeBreton & Senter, 2008). LeBreton and Senter's (2008) guidelines were followed to interpret $r_{WG(j)}$ values: 0.00–0.30 indicates lack of agreement, 0.31–0.50 weak, 0.51–0.70 moderate, 0.71–0.90 strong and 0.91–1.00 very strong.

To calculate $r_{WG(j)}$, the observed variance within a group is compared to an expected random variance (Bliese, 2000). The expected variance is calculated using a null distribution selected by the researcher (LeBreton & Senter, 2008). In light of multiple null distributions, rectangular and slightly skewed null distributions were used (Meyer, Mumford, Burrus, Campion, & James, 2014), and interpreted as the upper and lower bound respectively, with the true estimate of agreement likely to be between the two (Biemann et al., 2012).

ICC(1) was used to estimate the proportion of variance on a subscale that was attributable to group (team) membership (Biemann et al., 2012). ICC(1) values range from –1.00 to 1.00: higher values indicate small variability within groups and large variability between groups (Schneider, Ehrhart, & Macey, 2011). As per LeBreton and Senter (2008), ICC(1) can be interpreted as an effect size and values of 0.01 indicated a small effect, 0.10 medium effect and 0.25 large effect.

ICC(2) was used to estimate the reliability of group means in the sample (Bliese, 2000). Values typically range from 0 to 1: higher values indicate that group means reliably distinguish between groups (Bliese, 2000). As per Klein et al. (2000), ICC(2) values above 0.70 were considered acceptable, between 0.50 and 0.70 marginal, and below 0.50 poor.

3.3 | Multilevel modelling

Given that residents were nested within group homes, and the variables were conceptualized at the individual and group level, analyses were conducted using multilevel modelling (MLM). Two-level MLM was conducted in Mplus 8.3 to examine the effect of group home

culture on each of the QOL-dependent variables. Because adaptive behaviour has been shown in previous research to be a predictor of QOL outcomes, SABS scores were included in the analyses as a control variable and entered as a level 1 predictor. ASM scores were also included as a level 1 predictor of engagement in activities. Level 2 predictors were the GHCS subscales. All level 1 and level 2 predictors were grand mean centred to facilitate interpretation of the intercepts and slopes, and because the effects of the level 2 predictors were of primary interest (Enders & Tofghi, 2007).

The multilevel models were built using a bottom-up approach (Hox, 2010; Raudenbush & Bryk, 2002). In the first step, the intercept only model (or null model) in which no predictor variables are included, was tested. This model allowed for the intraclass correlation (ICC) to be calculated as an estimate of the proportion of variance in the dependent variable that was between groups (Raudenbush & Bryk, 2002). In the second step, level 1 variables were included, and in the third step, level 2 variables. An example of a full multilevel model tested to predict community involvement was:

$$\begin{aligned}
 ICI_{ij} = & \gamma_{00} + \gamma_{10}SABS_{ij} + \gamma_{01}SWB_j + \gamma_{02}Fractional_j \\
 & + \gamma_{03}ETL_j + \gamma_{04}Collaboration_j + \gamma_{05}Social\ Distance_j \\
 & + \gamma_{06}Valuing\ Res_j + \gamma_{07}AoSV_j + u_{0j} + e_{ij}
 \end{aligned}$$

In this model, ICI was the dependent variable community involvement, γ_{00} was the mean intercept across the groups, SABS was the level 1 predictor, and the level 2 predictors were the GHCS subscales. In relation to the GHCS subscales, SWB refers to Supporting Well-Being, ETL to Effective Team Leadership, Collaboration to Collaboration within the Organization, SocialDistance to Social Distance from Residents, ValuingRes to Valuing Residents and Relationships, and AoSV to Alignment of Staff with Organizational Values. The subscript j refers to the group homes and i to the individual; ij refers to resident i nested within group home j . The variable u_{0j} was the residual for the random intercept and e_{ij} was the residual at the individual level (i.e. level 1). Similar models were tested to predict the other dependent variables in this study.

The maximum likelihood method with robust standard errors was used to estimate the parameters. It also allowed for the likelihood ratio test to be conducted: that is, the difference between the log likelihood of the new model and the previous model was calculated to test whether the new model fitted the data significantly better than the previous model (Hox, 2010). The likelihood ratio test was performed using the Satorra–Bentler scaled difference chi-square method (see Bryant & Satorra, 2012). Only variables that contributed significantly to improving model fit were retained in the final models (Snijders & Bosker, 2012).

4 | RESULTS

In total, 113 staff returned questionnaires (51% response rate). Data from six respondents were removed because staff did not meet the

eligibility criterion or the group home address was omitted. Therefore, data from 107 staff participants across 23 group homes were included. The mean number of staff respondents per group home was 4.7 (range = 3–8). Of the 98 participants with intellectual disabilities, EMAC-R data were missing for seven and ASM data for nine; these were addressed using listwise deletion in the MLM analyses.

4.1 | Aggregation

To assess the appropriateness of aggregating individual level GHCS data to the group home (staff team) level, tests of interrater agreement and interrater reliability were performed using $r_{WG(J)}$, ICC(1) and ICC(2). Results of these analyses are presented in Table 2. For each GHCS subscale, the $r_{WG(J)}$ index was used to assess within group agreement for each staff team and the mean across the teams. Using a rectangular distribution, the range of mean $r_{WG(J)}$ values was 0.83–0.97 across the subscales, indicating strong to very

strong agreement. Only 1 of 23 staff teams was found to have low agreement ($r_{WG(J)} < 0.70$) for more than one subscale. Using a slightly skewed distribution, the range of mean $r_{WG(J)}$ values was 0.69–0.95 across the subscales, indicating moderate to very strong agreement (LeBreton & Senter, 2008).

For each subscale, ICC(1) was calculated to indicate the proportion of variance that could be attributed to team membership. The range for ICC(1) values was 0.16–0.42, indicating medium to large effects (LeBreton & Senter, 2008). For each subscale, ICC(2) was calculated to indicate the reliability of team mean scores. The range for ICC(2) values was 0.47–0.76, reflecting results for small sized teams (Ehrhart, Schneider, & Macey, 2014). Overall, the $r_{WG(J)}$, ICC(1) and ICC(2) results indicated that aggregation was appropriate.

Table 3 provides the means, standard deviations and intercorrelations for the GHCS using data aggregated to the group home level. The means ranged from 3.34 (Collaboration within the Organization) to 4.33 (Valuing Residents and Relationships).

TABLE 2 Interrater agreement and interrater reliability indices of the group home culture scale

Subscale	Rectangular	Slightly Skewed	ICC(1)	ICC(2)
	$r_{WG(J)}$	$r_{WG(J)}$		
	M (SD)	M (SD)		
1. Supporting Well-Being	0.97 (0.02)	0.95 (0.03)	0.42	0.76
2. Factional	0.86 (0.21)	0.70 (0.33)	0.41	0.76
3. Effective Team Leadership	0.89 (0.15)	0.76 (0.32)	0.22	0.56
4. Collaboration within the Organization	0.83 (0.23)	0.69 (0.29)	0.41	0.76
5. Social Distance from Residents	0.85 (0.21)	0.72 (0.32)	0.20	0.54
6. Valuing Residents and Relationships	0.97 (0.02)	0.95 (0.05)	0.36	0.72
7. Alignment of Values	0.95 (0.03)	0.91 (0.06)	0.16	0.47

Note: $N = 107$ staff members; $N = 23$ group homes. Subscale 7 = Alignment of Staff with Organizational Values.

TABLE 3 Means, standard deviations, and intercorrelations of the group home culture scale

Subscale	M	SD	1	2	3	4	5	6	7
1. Supporting Well-Being	4.14	0.41	–						
2. Factional ^a	3.49	0.68	0.76**	–					
3. Effective Team Leadership	4.12	0.45	0.58**	0.52*	–				
4. Collaboration	3.34	0.64	0.66**	0.71**	0.39	–			
5. Social Distance from Residents ^a	4.00	0.46	0.73**	0.77**	0.50*	0.27	–		
6. Valuing Residents	4.33	0.33	0.51*	0.33	0.46*	0.13	0.47*	–	
7. Alignment of Values	4.06	0.33	0.76**	0.68**	0.50*	0.71**	0.51*	0.52*	–

Note: $N = 23$ group homes. Subscale 4 = Collaboration within the Organization; Subscale 6 = Valuing Residents and Relationships; Subscale 7 = Alignment of Staff with Organizational Values.

^aSubscale is reverse scored.

* $p < .05$.

** $p < .01$.

4.2 | Testing assumptions

Data were checked for missing values, outliers, multicollinearity and normality of residuals. There were missing data for 10 staff participants on the GHCS items. To calculate the mean score for each staff participant for each subscale, missing item ratings were treated according to the guidelines by Neill (2008).

Descriptive statistics for the individual level variables for participants with intellectual disabilities are presented in Table 4. Mean values for the SABS, EMAC-R and IPDL were slightly higher than those reported by Beadle-Brown et al. (2016); however, values for the ICI, CMS and ASM were similar. As shown in Tables 3 and 4 (ASM and SABS variables), no multicollinearity of the independent variables was found (i.e. $r > 0.90$; Tabachnick & Fidell, 2014), although two of the GHCS subscales had several correlations above 0.70 (Table 3), suggesting potential multicollinearity (Pallant, 2013). No outliers were found using Mahalanobis distance ($p < .001$; Tabachnick & Fidell, 2014). The residuals were checked by inspecting Q-Q plots and found to be normally distributed.

4.3 | Engagement in activities

Multilevel modelling (MLM) analyses were conducted to examine the effect of group home culture on QOL outcomes for people with intellectual disabilities who live in group homes. Table 5 provides the parameter estimates, standard errors, and z-values for the variables to predict engagement in activities (EMAC-R), the intraclass correlation (ICC) for the null model, the likelihood ratio test (TRd) and the proportion of variance explained (R^2) at levels 1 and 2. In the null model, the ICC was 0.508, indicating that 50.8% of the variance in engagement in activities was between the group homes. In Model 1, the inclusion of adaptive behaviour (SABS) and Active Support Measure (ASM) scores significantly improved the model's fit to the data, $X^2(2) = 54.64$, $p < .001$. In the next step, the Group Home Culture Scale (GHCS) subscales were included. Only Effective Team Leadership ($\gamma = 22.02$, $z = 2.74$, $p = .006$) and Alignment of

Staff with Organizational Values ($\gamma = -25.11$, $z = -2.06$, $p = .040$) significantly predicted engagement in activities; their inclusion also significantly improved the model's fit, $X^2(2) = 11.14$, $p < .01$. Model 2 was selected as the final preferred model, which explained 56% (level 1) and 46% (level 2) of the variance in engagement in activities.

Table 5 shows that SABS, ASM scores and Effective Team Leadership were positively related to engagement in activities, whereas, unexpectedly, Alignment of Staff with Organizational Values was negatively related. Further examination showed this subscale was a negative suppressor in the model (Pandey & Elliott, 2010), as demonstrated by (a) its large positive association with Effective Team Leadership ($r = 0.50$, $N = 23$, $p = .015$); (b) its weak non-significant association with engagement in activities on its own ($r = 0.01$, $N = 23$, $p = .97$); (c) its negative relationship with engagement in activities in the model ($\gamma = -25.11$, $z = -2.06$, $p = .040$); and (d) its inclusion increasing the predictive effect of Effective Team Leadership on engagement in activities from $\gamma = 13.48$, $z = 2.51$, $p = .012$, to $\gamma = 22.02$, $z = 2.74$, $p = .006$.

The MLM analysis to predict engagement in activities was repeated without ASM scores entered as a predictor—see Table 6. In Model 1, the inclusion of SABS improved the model's fit, $X^2(1) = 19.95$, $p < .001$. In the next step, Supporting Well-Being ($\gamma = 35.58$, $z = 2.21$, $p = .027$) and Alignment of Staff with Organizational Values ($\gamma = -42.09$, $z = -2.47$, $p = .013$) were the only GHCS subscales found to significantly predict engagement in activities. Their inclusion significantly improved the model's fit, $X^2(2) = 7.73$, $p < .05$. In Model 2, SABS and Supporting Well-Being were positively related to engagement in activities; in contrast, Alignment of Staff with Organizational Values was negatively related. The final model explained 27% (level 1) and 41% (level 2) of the variance in engagement in activities.

4.4 | Community involvement

Table 7 presents the results of the MLM to predict community involvement (ICI). In the null model, the ICC was 0.497, indicating that 49.7% of the variance in ICI was between the group homes. In Model 1, the inclusion of SABS significantly improved the model fit of the data, $X^2(1) = 12.34$, $p < .001$. When the GHCS

TABLE 4 Means, standard deviations, and intercorrelations of the individual level independent and dependent variables

Variable	n	M	SD	1	2	3	4	5	6
1. Engagement (EMAC-R)	91	55.86	29.78	–					
2. Domestic tasks (IPDL)	98	44.25	21.77	0.37**	–				
3. Community involvement (ICI)	98	48.60	19.93	0.38**	0.59**	–			
4. Choice making (CMS)	98	56.31	26.31	0.09	0.38**	0.26**	–		
5. Active support measure (ASM)	89	58.35	13.99	0.58**	0.40**	0.50**	0.31**	–	
6. Adaptive behaviour (SABS)	98	136.87	70.25	0.56**	0.54**	0.53**	0.25*	0.50**	–

Note: Pairwise deletion used for missing data.

* $p < .05$.

** $p < .01$.

TABLE 5 Multilevel model analysis to predict engagement in activities (EMAC-R)

	Null Model			Model 1			Model 2		
	Estimate	SE	z	Estimate	SE	z	Estimate	SE	z
Fixed effects									
Intercept	56.14	4.96	11.31***	56.55	3.41	16.57***	56.44	2.84	19.88***
Level 1									
SABS				0.12	0.05	2.49*	0.12	0.05	2.56*
ASM				1.00	0.21	4.73***	1.04	0.16	6.57***
Level 2									
ETL							22.02	8.03	2.74**
AoSV							-25.11	12.20	-2.06*
Random Effects									
Intercept u_{0j}	447.08	136.70	3.27**	175.38	76.51	2.92*	95.40	40.66	2.35*
Level 1 e_{ij}	434.52	98.01	4.43***	316.54	50.11	6.32***	316.37	49.62	6.38***
Additional									
ICC	0.508								
TRd				54.64***			11.14**		
No. Parameters	3			5			7		
R ² level 1				0.55			0.56		
R ² level 2							0.46		

Note: $N = 89$ residents; $N = 23$ group homes.

Abbreviations: AoSV, alignment of staff with organizational values; ASM, active support measure; ETL, effective team leadership; SABS, short adaptive behavior scale; TRd, likelihood ratio test.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

subscales were entered, only Supporting Well-Being ($\gamma = 19.32$, $z = 2.84$, $p = .005$) significantly predicted ICI. In Model 2, the inclusion of Supporting Well-Being significantly improved the model fit, $\chi^2(1) = 13.78$, $p < .001$. Both the SABS and Supporting Well-Being were positively related to ICI. In Model 2, the proportion of variance explained in the ICI was 15% at level 1 and 49% at level 2.

4.5 | Participation in domestic tasks

In the MLM to predict participation in domestic tasks (IPDL), the ICC was 0.509. In Model 1, the inclusion of SABS ($\gamma = 0.17$, $z = 5.97$, $p < .001$) significantly improved the model fit, $\chi^2(1) = 8.48$, $p < .01$. Next, when the GHCS subscales were entered, none were found to significantly predict IPDL in the final Model 2.

4.6 | Choice making

In the MLM to predict choice making (CMS), the ICC was 0.541. In Model 1, SABS was significantly related to CMS ($\gamma = 0.10$, $z = 2.16$, $p = .031$), but its inclusion did not significantly improve the model fit, $\chi^2(1) = 3.21$, $p > .05$. Next, when the GHCS subscales were entered,

no statistically significant associations were found between the subscales and CMS in the final Model 2.

5 | DISCUSSION

In the present study, the effect of organizational culture on QOL outcomes was examined statistically, showing that specific dimensions of group home culture, and not others, to be predictive. In this way, it builds on previous findings suggestive of organizational culture accounting for differences in residents' QOL outcomes (Bigby et al., 2014; Gillett & Stenfort-Kroese, 2003). Specifically, Effective Team Leadership and Alignment of Staff with Organizational Values predicted level of engagement in activities, while accounting for the effects of adaptive behaviour and the quality of Active Support. This statistical model explained more of the variance in engagement than another model that excluded the quality of Active Support, which was expected given previous research has shown it to be predictive of engagement (Mansell, Beadle-Brown, Whelton, Beckett, & Hutchinson, 2008).

The nature of the association found for engagement can be interpreted to indicate that Effective Team Leadership from front-line supervisors may compensate for weak alignment between staff and the organization's espoused values. This finding contributes to the research evidence that front-line supervisors

TABLE 6 Multilevel model analysis to predict engagement in activities (EMAC-R), excluding active support measure (ASM) scores

	Null Model			Model 1			Model 2		
	Estimate	SE	z	Estimate	SE	z	Estimate	SE	z
Fixed effects									
Intercept	55.86	4.92	11.35***	56.44	3.63	15.55***	56.37	3.24	17.38***
Level 1									
SABS				0.22	0.04	5.69***	0.17	0.06	3.05**
Level 2									
SWB							35.58	16.07	2.21*
AoSV							-42.09	17.01	-2.47*
Random effects									
Intercept u_{0j}	438.93	135.28	3.25**	203.96	104.22	1.96	135.50	60.48	2.24*
Level 1 e_{ij}	432.60	95.80	4.52***	392.00	75.78	5.17***	389.61	78.11	4.99***
Additional									
ICC	0.505								
TRd				19.95***			7.73*		
No. Parameters	3			4			6		
R ² level 1				0.39			0.27		
R ² level 2							0.41		

Note: N = 91 residents; N = 23 group homes.

Abbreviations: AoSV, alignment of staff with organizational values; SABS, short adaptive behavior scale; SWB, supporting well-being; TRd, likelihood ratio test.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

TABLE 7 Multilevel model analysis to predict index of community involvement (ICI)

	Null Model			Model 1			Model 2		
	Estimate	SE	z	Estimate	SE	z	Estimate	SE	z
Fixed effects									
Intercept	47.47	3.20	14.85***	48.09	2.44	19.70***	47.63	2.12	22.62***
Level 1									
SABS				0.13	0.02	5.43***	0.08	0.03	2.89**
Level 2									
SWB							19.32	6.81	2.84**
Random effects									
Intercept u_{0j}	188.86	62.34	3.03**	96.64	46.73	2.07*	61.51	23.22	2.65**
Level 1 e_{ij}	191.43	33.38	5.74***	180.97	33.19	5.45***	178.36	32.29	5.53***
Additional									
ICC	0.497								
TRd				12.34***			13.78***		
No. Parameters	3			4			5		
R ² level 1				0.32			0.15		
R ² level 2							0.49		

Note: N = 98 residents; N = 23 group homes.

Abbreviations: SABS, short adaptive behavior scale; SWB, supporting well-being; TRd, likelihood ratio test.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

have an important role in the provision of group home services (Bigby & Beadle-Brown, 2018). For example, practice leadership has been shown to be related to the quality of Active Support (Bigby, Bould, Iacono, Kavanagh, & Beadle-Brown, 2020). Although similarities between practice leadership and the culture dimension of Effective Team Leadership may be apparent, such as providing staff with feedback about their performance, a key difference is in their purpose. In practice leadership, the purpose is to influence and improve staff practices; in Effective Team Leadership it is to transmit and embed a positive team culture. Ideally, through front-line supervisors influencing and shaping the culture, and communicating it to staff, they can influence how staff think, feel and act, and improve the way things are done (Schein, 2010).

The finding that Supporting Well-Being significantly predicted community involvement, while accounting for the effects of adaptive behaviour, indicates that when staff members perceive their shared ways of working to be directed towards supporting well-being, residents will experience greater participation in the community. These ways of working have been proposed to reflect Person Centred Active Support, providing choice and facilitating social inclusion (Bigby & Beadle-Brown, 2016). In staff teams that score high on Supporting Well-Being, these ways of working are likely to be part of the norms (i.e. expectations about how staff ought to behave in certain situations) and patterns of behaviour. That is, staff would usually act in ways that enable residents to live the life they want.

The absence of a relationship between certain dimensions of culture and residents' QOL outcomes raises questions about the extent to which culture matters in group homes, or at least, certain dimensions of it. For instance, the results suggest that dimensions of culture concerning interactions among staff—Factional and Collaboration within the Organization—are not directly related to residents' QOL outcomes. In contrast, Supporting Well-Being, which is about interactions among staff and residents, was found to be related to residents' engagement in activities and community involvement. It may be that staff–resident rather than staff–staff aspects of culture are more likely to be related to residents' QOL outcomes. Despite finding that Factional and Collaboration within the Organization were not related to residents' QOL, these dimensions of culture could still matter in terms of the staff working environment in group homes, and, potentially, be indirectly related to residents' QOL outcomes.

5.1 | Practice implications

Prior to the present research, there had been little guidance available to organizations about which dimensions of group home culture they should develop or aim to acquire to enhance residents' QOL outcomes. The findings from this research suggest they develop front-line supervisors' team leadership skills and aim for staff members'

shared ways of working to be directed towards supporting resident well-being. The findings suggest that training and interventions that improve these dimensions of culture can potentially contribute to greater levels of engagement and community participation of people who live in group homes.

5.2 | Limitations and directions for future research

Participant self-selection introduces the potential for bias in all research in which participation is voluntary. Furthermore, the sample included staff and residents from group homes that had been participating in a longitudinal study in which Active Support had been implemented and monitored; the results may not generalize to other group homes. In future research, recruiting participants from a more diverse range of organizations may improve the generalizability of the results.

There was potential for social desirability bias to influence participant responses to the GHCS. To minimize this potential, the following strategies were used in the design and administration of the GHCS: (a) the items were mostly about staff behaviours; (b) respondents were reporting about their staff team rather than themselves; (c) data were collected using a self-report questionnaire; and (d) in the participant information statements, participants were informed that their confidentiality was assured. Whether social desirability influences participants' responses could be examined in future testing of the GHCS.

Although there is the possibility that the findings of statistically significant effects were false positives due to multiple comparisons (i.e. Type 1 error), use of a more conservative alpha could have increased the likelihood of Type 2 error. Given this study was exploratory, the first to examine the effects of group home culture on QOL outcomes, and there were limitations with the sample size at the group level, it was considered preferable to risk Type 1 error to keep open the line of enquiry. Further research using the GHCS is needed to confirm the findings.

It is important to note that the cross-sectional and correlational design used, and lack of manipulation of the independent variables, precludes making causal inferences about the relationships between dimensions of culture and QOL outcomes. Experimental research involving a culture change intervention would help strengthen the inferences drawn from this study.

The lack of associations between dimensions of group home culture with participation in domestic tasks and choice making was unexpected, but may be attributable to the small sample size. Also, the restricted range of scores for some of the GHCS subscales in the sample, particularly Valuing Residents and Relationships, could account for the failure to detect significant associations. Further, better powered studies with greater variation across group homes (e.g. including those not implementing Active Support) are needed before the potential association between group home culture and these resident outcomes are dismissed.

6 | CONCLUSION

The concept of organizational culture has potential to shed light on why residents' QOL outcomes vary across group homes. This is because staff in group homes develop shared values, beliefs, norms and patterns of behaviour which are likely to influence service delivery and staff performance. This study was the first to examine dimensions of group home culture as predictors of residents' QOL outcomes. Future research into group home culture has potential to further knowledge of how to deliver services that enhance QOL for people with intellectual disabilities.

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ORCID

Lincoln Humphreys  <https://orcid.org/0000-0002-8464-8642>

Christine Bigby  <https://orcid.org/0000-0001-7001-8976>

Teresa Iacono  <https://orcid.org/0000-0002-7988-9951>

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