LA TROBE UNIVERSITY

LIVING WITH DISABILITY
RESEARCH CENTRE

Summary Report

Enabling Engagement and Inclusion:

Organisational Factors That Embed Active Support in
Accommodation Services for People with Intellectual Disabilities

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Executive Summary

Rationale

More than 17,000 people with disabilities, mainly people with intellectual disabilities, live in shared supported accommodation services in Australia. Despite living in the community, many remain socially disconnected and spend a large proportion of their day disengaged – doing nothing (Netten et al., 2010). Reflecting the international literature, our Victorian pilot study found, on average, service users were disengaged for 49% of the time and some were disengaged for the full two-hour period of observation (Mansell, Beadle-Brown & Bigby, 2013). It is through engagement in meaningful activity and relationships that many aspects of quality of life are realised. People with intellectual disabilities rely on staff to provide opportunities for participation and assistance to be engaged in activities and social interactions.

Active Support has been a primary strategy to improve the quality of life of service users, address their disengagement and the variability of staff practice. Active Support is an evidence-based practice whereby staff provide sufficient facilitative assistance to enable service users to take part in meaningful activities and relationships, irrespective of the degree of intellectual disability or presence of additional problems (Mansell & Beadle-Brown, 2012). Unequivocally, front-line staff practice based on Active Support leads to better quality of life for people with intellectual disabilities (Mansell & Beadle-Brown, 2012).

Active Support has been widely adopted in Australia but has been difficult to embed in services.

Aims and Method

This research aimed to identify the factors that influence the extent to which staff provide Active Support and sustain its practice in organisations. The study began in 2009 and is ongoing. A battery of valid and reliable measures was used to collect data annually[1] through structured observations, staff completed surveys and interviews. The study was sufficiently large to allow for the use of advanced statistical methods; multi-level modelling to take account of the different levels of the data. Cross-sectional and longitudinal data sets were analysed, with the largest including 461 service users, from 134 services, managed by 14 organisations from 5 different states.

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[1] Detailed description of the methods are in each of the 4 published papers included in the appendices to this report.

Findings

Findings across the different data sets provide rigorous evidence that the following features at the service and organisational levels are predictors of good Active Support:

- Staff trained in Active Support;

- Strong practice leadership of individual direct support workers and their team through regular coaching, observation and feedback about their practice, discussion of Active Support in team meetings and individual supervision, shift planning, and support to maintain focus on the quality of life of the people they support as core to everything they do;

- Practice leadership structured such that leaders are close to every-day practice, and their tasks are not split across different positions;

- Staff having confidence in the management of the organisation;

- Services with a staff culture of supporting wellbeing;

- Services supporting no more than six people under one roof;

- Services supporting people with relatively homogenous support needs but who do not all have challenging behaviour;

- Senior leaders having a shared understanding of Active Support, and recognising and valuing high quality practice.

At the individual level, higher levels of adaptive behaviour were predictive of better Active Support

Implications

These findings suggest that staff are less skilled in tailoring Active Support to the needs of people with lower levels of adaptive behaviour. Highlighted is the need for practice leaders and senior managers to give more attention to the quality of Active Support for people with severe and profound intellectual disabilities, and thus their engagement-related support needs.

The study provides the strongest evidence to date about the positive influence of practice leadership on the quality of front-line staff practice. It points to the significance of all five domains of practice leadership; (1) overall focus on the quality of life of the people supported by the service; (2) allocation and organisation of staff; (3) coaching, observing, modelling and giving feedback to staff about the quality of their support; (4) reviewing performance with individual staff in supervision; and (5) reviewing team performance in team meetings,

rather than just observation, feedback and coaching which have become the primary focus in some organisations.

The findings provide new evidence confirming practice wisdom that practice leadership should be organised so that practice leaders are close to everyday staff, familiar with staff and the people they support and have opportunities for informal as well as formal observation of practice. They also suggest that the position tasked with practice leadership should be aligned with the front-line manager and thereby have authority to hold staff accountable for their practice. At the organisational level, the findings highlight the significance of senior leaders recognising the value of practice leadership and attending to organisation wide strategies for supporting and strengthening it.

There were inconsistences between the data sets about the predictive nature of the length of time an organisation had been implementing Active Support and organisational size. This may be because the advantages of smaller organisations dissipate over time, and that, for larger organisations, a period of five years may be required to successfully implement and embed Active Support.

The findings about the positive influence of organisational leaders who understand the significance of practice, Active Support and practice leadership are new. They demonstrate that it is the coherence of the values and actions of the leadership team rather than documented values in organisational policy or procedures that are important to delivery of good quality support. There are important messages for senior managers and boards about the significance of appointing leaders at all levels of the organisation who understand the value of practice to the quality of disability support services.

The study built on previous work about the benefits of structured observation compared to staff or indeed service user self-report (Mansell, 2011). Overall, the quality of support in all organisations followed an upward trajectory, although variability over time and between services within organisations remained. The annual independent reports compiled for each organisation were valued and at times challenged managers' impressions of service quality. These reports demonstrate that claiming to be delivering Active Support is not enough; some form of independent verification is necessary to give consumers and regulators confidence about such claims.

This study has applied research-based benchmarks for good Active Support and Practice Leadership which were measured through observation. There is no reason why evidence

about meeting such benchmarks should not be a requirement of all disability support organisations for every supported accommodation service they deliver.

Conclusions

This is the largest Australian study of Active Support and which used advanced statistical techniques to takes account of the multiple levels of the data. It has confirmed some of the previous findings about predictors of Active Support such as level of adaptive behaviour and staff training in Active Support. It extended knowledge about the significance of practice leadership to the quality of Active Support and identified the importance of key organisational factors associated with the values and actions of senior leaders and the structuring of practice leadership. These factors are pivotal to delivering good Active Support to address poor and variable quality support and therefore improve the quality of life of people with intellectual disabilities in services.

These predictors of good Active Support also provide a set of evidence-based indicators of what must be in place, at service and organisational levels, to deliver good quality Active Support. The study applied research-based benchmarks for good Active Support and Practice Leadership measured through observation. Evidence about meeting such benchmarks should be a requirement of all disability support organisations for every supported accommodation service they deliver.

There is also scope to tailor such indicators to different audiences: consumers of services to assist in choice, the NDIS Quality and Safeguard Commission to assist in service registration, and auditors or the Commission in inspecting or monitoring services.

This study has contributed substantial and rigorous evidence about the factors necessary to sustain good Active Support at the service and organisational levels. Active Support and Practice Leadership are among the few areas in disability practice with an evidence base which provide behavioural indicators of and benchmarks for good practice. This knowledge should be used by disability support organisations, the NDIS, and the Commission to ensure effective use of disability funding and improve the quality of disability services in Australia.

Enabling engagement and inclusion: organisational factors that embed Active Support in accommodation services for people with intellectual disabilities: Summary Report

The purpose of this study was to improve the quality of support to people with intellectual disabilities by identifying the factors necessary to embed Active Support in services. This report provides a summary of the rationale, approach and findings of the study. It discusses the significance of the findings and implications for service providers, funders, regulators and people with intellectual disabilities and their families. The study began in 2009 and is ongoing. This report presents an analysis of data collected from 2009 to 2017. The research was funded by fourteen disability support organisations and an Australian Research Council Linkage grant[2].

Rationale

More than 17,000 people with disabilities, mainly people with intellectual disabilities, live in shared supported accommodation services (services) in Australia. Despite living in the community many people with intellectual disability remain socially disconnected and spend a large proportion of their day disengaged – doing nothing (Netten et al., 2010). Reflecting the international literature, our Victorian pilot study showed considerable variability in levels of engagement of service users and the quality of staff support across services. For example, on average, service users were disengaged for 49% of the time and some were disengaged for the full two-hour period of observation (Mansell, Beadle-Brown & Bigby, 2013).

It is through engagement in meaningful activity and relationships that many aspects of quality of life are realised. For example, personal development is possible only if people participate in activities that broaden their experiences; interpersonal relations and social inclusion depend on interacting with other people; and physical health depends on lifestyle and activity (Robertson et al., 2000). People with intellectual disabilities rely on staff to provide opportunities for participation and assistance to be engaged in activities and social interactions.

The introduction of *Active Support* has been a primary strategy to improve the quality of life of service users, address their disengagement and the variability of staff practice. Active Support is an evidence-based practice whereby staff provide sufficient facilitative assistance

to enable service users to take part in meaningful activities and relationships, irrespective of the degree of intellectual disability or presence of additional problems (Mansell & Beadle-Brown, 2012).

A strong theoretical and empirical base demonstrates that staff use of Active Support leads to better quality staff assistance, higher levels of staff contact, and increased service user engagement in meaningful activity and relationships (Mansell & Beadle-Brown, 2012). Active Support is a core element of person-centred approaches. It should be combined with person-centred planning to inform a person's broader goals. It underpins the effective application of other person-centred approaches, such as positive behaviour support for people with complex needs (Ockenden et al., 2016). Unequivocally, front-line staff practice based on Active Support leads to better quality of life for people with intellectual disability (Mansell & Beadle-Brown, 2012).

Active Support has been widely adopted in Australia. However, similar to evidence-based practice in other fields, Active Support has been difficult to implement and sustain in disability support organisations. For example, our pilot showed that only one of six organisations in Victoria, claiming to use Active Support, were consistently delivering good support (Mansell et al., 2013). There are many propositions from organisational theory, research and practice wisdom about what influences the quality of Active Support. These include; 1) staff training, in terms of type, take up and coverage; 2) staff motivation, in terms of qualifications, competing demands and quality of leadership; and 3) management commitment, demonstrated through support from managers and organisational processes. There was, however, little evidence about these influencing factors either from Australia or internationally other than in respect of staff training that has both classroom and hands-on components (Flynn et al., 2018).

This research sought to answer the question posed by Mansell et al., (2008) "what factors influence the extent to which staff provide Active Support?" Identifying the individual, service and organisational level factors associated with good Active Support will assist disability support organisations to more effectively design services and sustain Active Support. This knowledge will also provide indicators of service quality that will be of value to funders, regulators and consumers.

Approach

This was a large-scale study that incorporated both longitudinal and cross-sectional designs. Depending on the size of the organisation, data were collected from either the same services

every year, or a representative sample of different services each year. A battery of measures was used to collect data annually from services managed by partner organisations, using reliable measures[3] through structured observations, staff-completed surveys and interviews. Data about the quality of staff practice and service user engagement were included as well as many of the factors thought to influence implementation of Active Support, including; service user characteristics, staff characteristics, staff attitudes, quality of management support, staff-to-resident ratios, service design and organisational characteristics.

An observational measure was developed to measure practice leadership through interview, observation of front-line managers and document review (Beadle-Brown et al., 2016). Practice leadership was defined as; 1) Overall focus on the quality of life of the people supported by the service; 2) Allocation and organisation of staff; 3) Coaching, observing, modelling and giving feedback to staff about the quality of their support; 4) Reviewing performance with individual staff in supervision; and 5) Reviewing team performance in team meetings. Data on the quality of Active Support was collected using the 15-item Active Support Measure (Mansell et al., 2005) which was completed after a 2-hour observation of service user and staff interactions. Good Active Support was defined as a score of more than 66% on this measure.

In addition to the annual quantitative data, qualitative data about organisational leadership and structures were collected through semi-structured interviews with senior managers on two occasions; when the organisation first joined the study and in 2017. Organisational documents relating to practice, training and job descriptions were also collected at these two time points.

The scale of the study was sufficiently large to allow for the use of advanced statistical methods to take account of the different levels of the data, that is, individual service user, service, organisation and point in time. Multi-level modelling was used to analyse the quantitative data. The qualitative data were analysed using grounded theory methods and content analysis.

The following sections summarise the finding from analysis of the four different but complementary data sets which answer different aspects of the overarching research question.

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[3] Detailed description of the methods are in each of the 4 published papers included in the appendices to this report.

1. Predicting good Active Support – cross-sectional data set

This data set included the multiple factors, primarily at the service user and service level, that potentially influence the quality of Active Support. Only high-level organisational characteristics were included, such as size, scope and annual turnover. The data set was cross-sectional, comprising 461 service users, from 134 services, managed by 14 organisations. The data were collected at 7 time-points from 2009 to 2017, reflecting the differing dates to which organisations joined the study. Only one set of data was included for each service user.

Multi-level modelling identified predictors of the quality of Active Support as:

- Higher levels of adaptive behaviour (individual service user level)
- Stronger practice leadership (service level)
- More staff trained in Active Support (service level)
- Longer time since implementation of Active Support (organisational level).

Factors predictive of lower quality Active Support were:

- Larger service size – having more than six people in a service (service level)
- Larger organisations (organisational level).

The full analysis and discussion of these data is accessible and published in the Journal of Applied Research in Intellectual Disability included in the appendix (Bigby et al., in press a).

2. Predicting increases in quality of Active Support over time – longitudinal data set

This data set included factors similar to those in the cross-sectional analysis that were thought to influence Active Support. However, as a longitudinal design, the same data were collected from the same services multiple times at 12-18 month intervals. Included were 194 service users, from 51 services, managed by 8 organisations. The number of times data were collected from the same service depended on when the organisation joined the study. Data were collected seven times for one organisation, five for two organisations, four for two organisations, three for one organisation, and twice for two organisations.

Multi-level modelling showed that:

- The average quality of Active Support increased over time
- Increases in the quality of Active Support were slower in services with better quality Active Support at baseline

- The rate of increase in the quality of Active Support was similar irrespective of the support needs of service users.

Predictors of the quality of Active Support were:

- Higher levels of adaptive behaviour (individual service user level)

- Stronger practice leadership (service level)

- More staff trained in Active Support (service level).

Predictors of lower quality Active Support were:

- Larger service size – having more than six people in a service (service level)

- Heterogeneity of service users i.e. service users who fell in 3 groups based on their level of adaptive behaviour – less than 80, between 80-151 and more than 151 (service level).

The full analysis and discussion of these data is accessible and published in Research in Developmental Disabilities included in the appendix (Bould et al., 2019)

3. What matters at the organisational level – qualitative data

This data set included both quantitative and qualitative data. Quantitative data about the quality of Active Support were collected in 2017 from 71 services to calculate the proportion of services in each of the fourteen organisations that were delivering good Active Support. The qualitative data were the presence or absence of eight features of organisational leadership and structures identified inductively through analysis of interviews and documents. These eight features were; (1) Senior leaders sharing prioritisation of practice and Active Support; (2) Senior leaders strongly supporting practice leadership; (3) Senior leaders having different and competing priorities; (4) Senior leaders' perception still being in early stages of Active Support; (5) Organisation of practice leadership being close to everyday service delivery; (6) Concentration of practice leadership and line management tasks; (7) Organisational documents showing that Active Support is central to expectations of the way staff work and; (8) Organisational documents showing that Active Support is incorporated into a practice framework.

The quantitative data for each organisation were plotted against the presence or absence of features of leadership and structures in the organisation. Organisations that delivered good Active Support to the majority of service users in more than 71% of their services shared four features that were not shared by any other organisation. The features were:

- Senior leaders shared prioritisation of practice and Active Support

- Senior leaders strongly supported practice leadership

- Organisation of practice leadership was close to everyday service delivery

- Concentration of practice leadership and line management tasks.

The potential association between these four features and good Active Support provided the basis for inclusion of the presence or absence of these in a multi–level model of factors predicting the quality of Active Support.

The full analysis and discussion of this data set is accessible and published in the Journal of Intellectual and Developmental Disabilities included in the appendix (Bigby et al., in press b)

4. Organisational, service and individual factors predictive of good Active Support

This data set included all the service user, service and organisational factors thought to influence Active Support that were included in the first data set. Added to these were the four organisational features identified in the third data set. The design was cross-sectional, and data were collected in 2017 from a sample of 253 service users, from 71 services managed by 14 organisations.

The multi-level modelling analysis showed that good Active Support was predicted by:

- Higher levels of adaptive behaviour (individual service user level)

- Stronger practice leadership (service level)

- Smaller services i.e. 1-6 service users (service level)

- Positive staff perceptions of management (service level)

- Senior leaders who shared prioritisation of practice and Active Support (organisational level)

- Senior leaders who strongly supported practice leadership (organisational level)

- Organisation of practice leadership close to everyday service delivery (organisational level)

- Concentration of practice leadership and line management tasks (organisational level).

Some factors found to be predictive of good Active Support in the analysis of the larger cross-sectional data set (first data set) were not identified as predictive in this data set; these were staff training in Active Support, homogeneity of service users, size of organisation or time implementing Active Support. The reason may have been the limited variability in the

2017 data set, associated with the maturity of the organisations in implementing Active Support. For example, by 2017 a much higher proportion of staff had been trained in Active Support (82%), very few services had a heterogenous mix of service users, and most organisations had been implementing Active Support for more than 5 years.

The full analysis and discussion of these data is accessible and published in the Journal of Intellectual and Developmental Disability in the appendix (Bigby et al., in press c).

5. Fragility of the quality of Active Support

Annual reports prepared for each organisation proved an analysis of data about the quality of practice, engagement of service users and strength of practice leadership. Data for each organisation were compared with previous years and to the whole sample of organisations involved in the study. An analysis of these data collected from 2009 to 2012 was published in 2017 (Bigby et al., 2017). It illustrated the continuing variability of the quality of support in these organisations. Some of this variability was clearly accounted for by changes in the percentages of staff who had been trained in Active Support. This paper together with the subsequent annual reports demonstrate an upward trajectory in the quality of Active Support in participating organisations but also its fragility over time. Table 1 shows for example, the percentage of services in each year that delivered good Active Support to a majority of service users.

Table 1. Percentage of services delivering good Active Support

Organisation	2009-2010	2011-2012	2013	2014	2015	2016	2017
1	0%	0%	20%	60%	80%	60%	100%
2	100%	75%	71%	71%	43%	38%	71%
3	25%	0%	40%	40%	60%	80%	100%
4	13%	0%	50%	63%	75%	44%	33%
5			50%	60%	25%	20%	40%
6			0%	14%	29%	0%	57%
7			25%	75%	63%	38%	71%
8			57%	57%	20%	0%	86%
9					14%	13%	50%
10					25%	0%	33%
11					50%	33%	29%
12						29%	57%
13						0%	83%
14						25%	50%

Likewise, the qualitative data from interviews with organisational leaders pointed to the fragile nature of support from senior leaders for practice, as senior personnel as well as external demands changed.

6. Staff culture as a predictor of Active Support

Staff culture has frequently been proposed as influencing the quality of staff practice. When this study began there were no reliable measures of culture applicable to supported accommodation services, although dimensions of culture in services had been identified through qualitative methods (Bigby et al., 2012, 2015, 2016). The *Group Home Culture Scale* developed as part of this study now provides a reliable measure of staff culture in services (Humphreys et al., in press). The scale was included in the battery of measures for a sub-set of staff in the 2017 round of data collection, and completed by 86 staff working with 76 service users from 20 services managed by 11 organisations. Analysis, using multi-level modelling, from this small sample, showed that higher scores on the dimension of culture *supporting wellbeing* was predictive of the quality of Active Support. Analysis of a larger sample from the 2018 annual data collection will yield further insights into the influence of culture on the quality of support.

7. Summary

Figure 1 brings together the findings across the different data sets. Overall this research provides rigorous evidence that the following features at the service and organisational levels are predictors of good Active Support:

- Staff trained in Active Support;
- Strong practice leadership of individual direct support workers and their team through regular coaching, observation and feedback about their practice, discussion of Active Support in team meetings and individual supervision, shift planning, and support to maintain focus on the quality of life of the people they support as core to everything they do;
- Practice leadership structured such that leaders are close to every-day practice, and their tasks are not split across different positions;
- Staff having confidence in the management of the organisation;
- Services not supporting more than six people under one roof;
- People sharing accommodation having support needs that are not too different, and not all having challenging behaviour;
- Senior leaders having a shared understanding of Active Support, and recognising and valuing high quality practice.

Figure 1.
Combined data sets predictors of good Active Support

Staff culture - supporting wellbeing

Similarity levels of adaptive behaviour

Size of the service – 6 or less residents

Presence of organisational management features:
- Senior leaders shared prioritisation of practice and Active Support
- Senior leaders strongly supporting practice leadership
- Practice leadership close to front-line service delivery
- Concentration of practice leadership tasks with front line management

Individual level

Service level

Organisational level

Higher levels of adaptive behaviour

Stronger practice leadership

More staff trained in Active Support
More positive staff perception of quality of management

Smaller number of services
Greater time implementing Active Support

8. Significance and Implications

This is the largest study of Active Support conducted in Australia and which used advanced statistical techniques to take account of the multiple levels of the data. It has confirmed some of the previous findings about predictors of Active Support, extended knowledge about the significance of practice leadership to the quality of Active Support and identified the importance of key organisational factors associated with the values and actions of senior leaders and the structuring of practice leadership.

Staff characteristics and training

The only significant staff characteristics associated with good Active Support were training and staff perceptions of the quality of management. Other variables proposed as predictive of good support, such as qualifications, experience, attitudes towards people with intellectual disabilities, role clarity and role conflict were not found to be influential.

Staff training in Active Support may override other characteristics such as qualifications and experience. The combined findings suggest that a higher proportion of staff with Active Support training positively influences the quality of support, but only to a threshold point. That threshold could not be determined, but the failure of staff training to predict Active Support in the fourth data set in which 82% of staff had been trained suggests that this level of training at least meets, if not exceeds, the threshold.

Level of adaptive behaviour and staff training

At the individual level, higher levels of adaptive behaviour were predictive of better Active Support, confirming previous research (Mansell & Beadle-Brown, 2012). Originally developed in services for people with severe and profound intellectual disabilities, Active Support compensates for difficulties people have in initiating engagement and completing tasks. A key principle of Active Support is adapting support to the ability of each individual as well as their other needs and preferences. This ability to adapt support requires staff skills in, for example, giving intensive hand-over-hand assistance to individuals with profound intellectual disability, as well as knowing when and how to stand back to give a more able person time to complete a task independently. While potential levels of engagement of some people with severe intellectual disabilities may be lower than those with less severe disabilities, there is no reason that the quality of Active Support should differ between groups.

This finding suggests that; (1) staff are not skilled in tailoring Active Support to the needs of each individual and; (2) staff are less skilled in supporting people with lower levels of adaptive behaviour. Highlighted is the need for practice leaders and senior managers to give

more attention to the quality of Active Support for people with severe and profound intellectual disabilities, and thus their engagement-related support needs. There is also a strong case for a greater focus on skilling staff in tailoring Active Support to individuals with differing levels of ability, especially people with high support needs.

During the course of the study an online training resource for Active Support, *Every Moment Has Potential*, was produced through a collaboration of Greystanes Disability Support Services and La Trobe University funded by the Department of Industry. These were the first Australian quality training materials in Active Support and are being widely used across the disability sector, with 272,630 page views over two years from Sept 2017 and 90,355 unique visits. The material is also embedded in the Learning Management Systems of a number of large disability support providers.

Practice Leadership

This study provides the strongest evidence to date about the positive influence of practice leadership on the quality of front-line staff practice. It points to the significance of all five domains of practice leadership; (1) overall focus on the quality of life of the people supported by the service; (2) allocation and organisation of staff; (3) coaching, observing, modelling and giving feedback to staff about the quality of their support; (4) reviewing performance with individual staff in supervision; and (5) reviewing team performance in team meetings, rather than just observation, feedback and coaching which have become the primary focus in some organisations.

Notably, several domains of practice leadership such as observation, feedback, coaching, and supporting team-work mirror the work completed by trainers as part of hands-on Active Support training. These findings demonstrate the need for continuing and regular practice support of this type, rather than it being a one-off requirement as part of induction training.

These findings provide new evidence that reinforces practice wisdom that practice leadership should be organised so that practice leaders are close to everyday staff, familiar with staff and the people they support and have opportunities for informal as well as formal observation of practice. The findings also suggest that the position that is tasked with practice leadership should be aligned with the front-line manager and thereby have authority to hold staff accountable for their practice.

At the organisational level the findings highlight the significance of senior leaders recognising the value of practice leadership and attending to organisation wide strategies for supporting and strengthening it.

At a time when many disability support organisations are restructuring, these findings provide important messages about the critical role that practice leadership plays in delivery of good quality support, as well as the way it should be structured within organisations and valued by senior leaders.

Service design

The finding that the quality of Active Support is predictive by smaller size services up to a maximum of 6, confirms a wider body of research about the positive impact of smaller services on quality of life outcomes (Tossebro, 1995). Across the data sets there is no clear picture about the association between homogeneity of service user needs in a service and the quality of Active Support. However, findings from the combined data set suggest complementary evidence: that heterogeneity of support needs detracts from the provision of quality Active Support, while homogeneity removes this factor as an influence. A mediating factor here may be the level of staff skill in adapting support to individuals, in particular in supporting people with higher support needs.

Length of time implementing Active Support and size of organisations

There were inconsistences between the data sets about the predictive nature of the length of time an organisation had been implementing Active Support and organisational size. This finding may be due to the fact that by 2017 most organisations had been implementing Active Support for at least 5 years and it is likely to take larger organisations longer than smaller ones to successfully implement Active Support. It may have been the relatively early success of smaller organisations in a short time period that was identified in the first data set, which disappeared as Active Support became embedded over longer periods.

A tentative hypothesis might be that advantages of smaller organisations dissipate over time, and that, for larger organisations, a period of five years may be required to successfully implement and embed Active Support. It may also be that after five years, other organisational level factors confound the impact of time. For example, analysis of the qualitative data indicated that disruption to the processes of implementation may result from changes to senior personnel or competing organisational priorities emanating from external factors.

Actions and understanding by senior leaders in the organisation

The findings about the positive influence of organisational leaders who understand the significance of practice and Active Support are new. They demonstrate that it is the coherence of the values and actions of the leadership team rather than documented values in organisational policy or procedures that are important to delivery of good quality support.

This type of evidence challenges the relevance of paperwork documenting policy and procedures in quality standards and methods of auditing disability support services.

These findings hold messages for senior managers and boards about the significance of appointing leaders at all levels of the organisation who understand the value of practice to the quality of disability support services.

The qualitive data in the third data set identified changes that had occurred in commitment to practice by senior leaders since the study begun, which are indicative of the fragility of senior leaders prioritising practice over time. These data may also illustrate the impact on implementation of external factors; identified by Qian et al., (2017) as labour conditions, but in this study Australian disability reform, the NDIS.

The value of observing practice and independent monitoring of service quality

A primary method used in this study to measure both the quality of Active Support and of Practice Leadership has been observation. The Observed Measure of Practice Leadership was developed to complement the Active Support Measure. The study was built on earlier work about the benefits of observation compared to staff or indeed service user self-report (Mansell, 2011) and added to this body of knowledge (see Bould et al., 2016). The annual independent reports compiled for each organisation that at times verified and others challenged managers' impressions of service quality were seen as uniformly valuable by participating organisations. This research demonstrated that claiming to be delivering Active Support is not enough and suggests that some form of independent verification may be necessary to give consumers and regulators confidence about such claims.

10. Conclusions

The NDIS Commission has funded La Trobe University to translate some of these findings into accessible resource over the next two years, including an update to the Active Support training materials and a new online training program in Practice Leadership.

The identified predictors of good Active Support (see Figure 1) provide a blueprint for what organisations must pay attention to in order to implement or sustain good quality Active Support. These factors are pivotal to delivering good Active Support, addressing poor and variable quality support and therefore improving the quality of life of people with intellectual disabilities in services.

This study has applied research-based benchmarks for good Active Support and Practice Leadership which were measured through observation. There is no reason why evidence

about meeting such benchmarks should not be a requirement of all disability support organisations for every supported accommodation service they deliver.

The predictors of good Active Support provide a set of evidence-based indicators of what must be in place, at service and organisational levels, to deliver good quality Active Support. There is much scope to tailor such indicators to different audiences: consumers of services to assist in choice, the NDIS Quality and Safeguard Commission to assist in service registration, and auditors or the Commission in inspecting or monitoring services.

This study has contributed substantial and rigorous evidence about the factors necessary to sustain good Active Support at the service and organisational levels, which reinforces the significance of Practice Leadership. Active Support, and now Practice Leadership, are among the few areas in disability practice with an evidence base, that provide behavioural indicators of and benchmarks for good practice. This knowledge should be used by disability support organisations, the NDIS, and the Commission to ensure effective use of disability funding and improve the quality of disability services in Australia.

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Appendices – Published Papers

ORIGINAL ARTICLE

Factors that predict good Active Support in services for people with intellectual disabilities: A multilevel model

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Abstract

Background: Active Support, now widely adopted by disability support organizations, is difficult to implement. The study aim was to identify the factors associated with good Active Support.

Methods: Data on service user and staff characteristics, quality of Active Support and practice leadership were collected from a sample of services from 14 organizations annually for between 2 and 7 years, using questionnaires, structured observations and interviews. Data were analysed using multilevel modelling (MLM).

Results: Predictors of good Active Support were adaptive behaviour, practice leadership, Active Support training, and time since its implementation. Heterogeneity, having more than six people in a service and larger organizations were associated with lower quality of Active Support.

Conclusions: In order to ensure that Active Support is consistently implemented, and thus, quality of life outcomes improved, organizations need to pay attention to both service design *and* support for staff through training and practice leadership.

KEYWORDS

active support, engagement, Implementation, multilevel model, practice leadership, supported accommodation, training

1 | INTRODUCTION

Active Support is a practice designed to facilitate the quality of life of people with intellectual disabilities through engagement in meaningful activity and social relationships (Mansell & Beadle-Brown, 2012). Developed during the late 1970s, the theoretical foundations of Active Support are in behavioural psychology. It has been widely adopted in the United Kingdom (UK) and Australia, and to a lesser extent in Scandinavia, the United States (US), Taiwan and New Zealand, and most commonly been used by staff in supported accommodation services (services) (Mansell, Beadle-Brown, & Bigby, 2013).

A growing evidence base points to the positive impact of Active Support on the quality of life of people with intellectual disabilities (Flynn et al., 2018). A systematic review of 20 papers and meta-analysis of the 14 studies reported in these indicated that Active Support was effective in changing the way staff interacted, moment to moment, with service users. Studies demonstrated significant improvement in the quality of staff support and assistance to residents to be engaged, leading to "significant increases in the amount of time residents spent engaged in all types of activities at home" (Flynn et al., 2018, p. 994). Although an association between Active Support and changes in residents' depressive symptoms, challenging behaviour, adaptive skills, choice and community participation were

reported across studies, Flynn et al.'s (2018) meta-analysis did not demonstrate convergence on the direction or significance of change for any of these factors. The evidence, albeit limited, of an association between Active Support and reduction in challenging behaviour suggests its complementarity to behavioural support strategies. For example, Ockendon, Ashman, and Beadle-Brown (2017) argued that Active Support is a foundational element of Positive Behaviour Support (PBS), setting the context for its successful implementation, and McGill, Ashman, and Beadle-Brown (2014) demonstrated Active Support as an integral component of PBS, which was associated with reductions in challenging behaviour. From a staff perspective, Active Support has been found to be associated with increased staff job satisfaction and a lower propensity for staff to leave their employment (Beadle-Brown, Hutchinson, & Whelton, 2012; Rhodes & Toogood, 2016).

Although the benefits of Active Support in terms of increased resident engagement appear unequivocal, experience of its implementation has not been straightforward. The quality of Active Support may decline over time, and staff training or organizational adoption of Active Support has not always led to practice changes or increased resident engagement. For example, in an Australian study of 33 services managed by six organizations that had adopted Active Support more than five years previously, only one organization was found to be delivering good Active Support (Mansell et al., 2013). Mansell, Beadle-Brown, Whelton, Beckett, and Hutchinson (2001), in a UK-matched sample study of services in general supporting those with less severe disabilities in which staff in 36 of the 72 houses staff were trained in Active Support, found that only 53% of residents were receiving good Active Support. Studies of more severely disabled populations have generally found that only between one fifth and one third of people are receiving good Active Support (Beadle-Brown et al., 2016). Such findings have led to the question "what factors influence the extent to which staff provide Active Support?" (Mansell, Beadle-Brown, Whelton, Beckett, & Hutchinson, 2008, p. 399). Many possible explanations have been proposed, but the evidence has been limited (see Bigby & Beadle-Brown, 2018).

Factors thought to influence quality of Active Support fall into three groups: (a) staff training in terms of type, take up and coverage—for example, Qian, Tichá, and Stancliffe (2017); (b) staff motivation, in terms of qualifications, competing demands and quality of leadership—for example, Mansell et al. (2008) and Mansell and Elliott (2005); and (c) management commitment, demonstrated through support from managers and organizational processes—for example, Fyffe, McCubbery, and Reid (2008) and Mansell et al. (2008). Mansell et al. (2008) argued there was as yet no clear understanding of organizational factors that facilitated Active Support, but they were likely to operate in combination and could be situation-specific. Flynn et al. (2018) found tentative evidence in their synthesis of 10 studies about the positive influence on Active Support of training comprised of classroom and interactive elements, settings with relatively low staff-to-resident ratios, services with relatively more residents (up to a maximum of 6), organizational leadership,

and management support and processes, such as team meetings. Another strand of work has shown a weak but positive correlation between good Active Support and strong front-line practice leadership (Beadle-Brown, Bigby, & Bould, 2015), or at least the presence of a practice leader in a service (Bould, Beadle-Brown, Bigby, & Iacono, 2018a).

The strength of studies into the factors associated with good Active Support has been limited by use of staff self-report data about the strength of the five elements of practice leadership (Beadle-Brown et al., 2014; Mansell et al., 2008), which has since been shown to differ considerably from use of an observational measure (Bould, Beadle-Brown, Bigby, & Iacono, 2018b). Further, in the largest studies to date, no account has been made of multi-level data, such that individuals living in the same house may be assigned different scores relating to an individual trait, but the same score as others in the house on a measure relating to a trait of the house. As a result, data at the level of the individual with intellectual disability are treated the same as data entered at the level of the service into linear regressions. For example, Mansell et al. (2008) accounted for 44% of the variance in Active Support scores across 72 services, but data dependency within clusters in their multiple regression analyses was evident; as a result, groups of individual service users from the same service would have shared the same scores for certain variables, such as staff training or ratios. Not accounting for this aggregation of group-level data increases the likelihood of type 1 error: that is, finding an effect that may not be there (Raudenbush & Bryk, 2002; Snijders & Bosker, 1999). Since this and other large-scale studies of Active Support, researchers have applied statistical analyses that accurately accommodate data from multiple levels in studies of services (Qian, Tichá, Larson, Stancliffe, & Wuorio, 2015).

The aim of the present study was to identify factors associated with individuals, services and organizational variables that predict the quality of Active Support using multilevel modelling (MLM). The data were drawn from a longitudinal study of services in Australia involving repeated data collection at 12-18 month intervals. Since 2009, when the study commenced, additional organizations have joined, bringing the total to 14 by 2017. The data reported in the present study are from a cross-sectional sample taken from the longitudinal study.

2 | METHODS

2.1 | Design

The study was a repeated cross-sectional design in which data were collected from 2009 to 2017, at 7 time points.[1] Consent was obtained from staff and service users, or, for those without consent capacity, from a person who usually made decisions for them, typically a parent or senior staff member of the service. The study received approval from the University Human Research Ethics Committee.

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[1]Data collection points were anchored to each organization and did not necessarily coincide with the same calendar year or number of years in the study.

TABLE 1 Number of supported accommodation services managed by each organization and years implementing Active Support

Organization	Total number of services managed	Total number of service users	Number of years implementing Active Support
1	5	21	8
2	15	28	14
3	5	18	13
4	34	155	12
5	25	100	6
6	7	29	5
7	10	62	5.5
8	33	138	11
9	27	140	2
10	38	131	9
11	23	66	2
12	7	42	1
13	16	78	1
14	31	142	1

2.2 | Participants and settings

A total of 461 service users from 134 services managed by 14 not-for-profit organizations participated in the study. Services provided 24-hr support for 1–12 people (M = 4.84) in ordinary community houses. As Table 1 shows, the number of services managed by each organization varied from 5 to 34, and the time since they first adopted Active Support varied from 1 to 14 years.

The seven time points at which data were collected reflected differences in when organizations joined the study. In order to increase the sample size, data collected from different services from the same organization in different years were also included.[2] Table 2 shows the number of services, service users and staff included in the analysis from each organization at each time point.

2.3 | Measures

2.3.1 | Quality of active support

The Active Support Measure (ASM) (Mansell et al., 2018) indicated the quality of Active Support, and, hence, was the predicted variable. It has been used in multiple studies of Active Support and its use ensured comparability of results (see Mansell & Beadle-Brown, 2012). The ASM is completed for each service user at the end of a 2-hr observation period. It has 15 items, with each rated on a scale of 0 (poor, inconsistent support) to 3 (good, consistent support) to yield a maximum score of 45, which is converted to a percentage. A percentage over 66.66 is considered a good level of Active Support (Mansell & Beadle-Brown, 2012). Two items relate

to support for people showing challenging behaviour—if none is observed, these two variables are missing, giving a maximum score of 39.

Across the seven time points, data for the ASM were collected by 13 observers, with each trained by one of the authors using video material and having completed at least two observations with an experienced observer before collecting data alone. Percentage agreement across the 15 items of the ASM for the seven observers involved in Time Point 1 and the two observers at Time Point 2 was 60% on average (range 29% – 98%, n = 24). Average Kappa was 0.32: the low score reflected frequent non-occurrence of Active Support. ASM inter-rater reliability was not conducted for Time Point 3 because all observations were by one observer. At Time Point 4, percentage observer agreement across three observers averaged 84% (range 73%–100%, n = 15), and average Kappa was 0.61 (range 0.21–0.80) (for more detail, see [removed for review]). At Time Points 5, 6 and 7, percentage agreement across four observers averaged 66% (range 55%–100%, n = 10); 58% (range 30%–100%, n = 10); and 87% (range 69%–100%, n = 26), respectively. Average Kappa 0.55 (range 0.20–0.100); 0.51 (range 0.29–0.100); and 0.73 (range 0.53–0.100), respectively. Despite low agreement for some ASM items, paired t tests showed agreement for the overall score obtained (i.e. on the basis of the maximum score) was not significantly different at each time point (range p = .271 to p = .385).

At each time point, organizational, service and service user-level data were collected as predictor variables. Organizational-level data were the number of services managed, total service users supported, and time since adoption of Active Support. Service-level data were staff-to-resident ratios during the 2-hr observation, and measures of staff experiences and satisfaction, front practice leadership. Service user-level data were measures of adaptive behaviour and other characteristics.

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[2]As part of the larger longitudinal study, data were collected from the same services at multiple data points and, where this was the case, the data point which showed the mean highest level of Active Support across service users in a service was included in the current data set.

TABLE 2 Number of services, consenting service users (SUs) and staff surveys from each organization included in the analysis at each time point

Organization	1	2	3	4	5	6	7	8	9	10	11	12	13	14	ALL
Time Point 1															
Services	0	0	0	0	4	0	0	7	0	2	0	0	0	0	13
Service users	0	0	0	0	9	0	0	25	0	7	0	0	0	0	41
Staff	0	0	0	0	24	0	0	25	0	6	0	0	0	0	55
Time Point 2															
Services	0	0	0	0	5	1	1	4	3	1	3	5	4	5	32
Service users	0	0	0	0	26	4	4	16	11	4	6	28	17	13	129
Staff	0	0	0	0	15	3	3	12	9	4	14	20	12	15	107
Time Point 3															
Services	0	0	2	4	4	2	1	4	4	3	5	0	0	0	29
Service users	0	0	5	11	16	8	5	15	14	13	11	0	0	0	98
Staff	0	0	6	16	16	10	7	15	21	11	15	0	0	0	117
Time Point 4															
Services	1	1	0	4	5	0	0	6	0	0	0	0	0	0	17
Service users	5	1	0	15	13	0	0	23	0	0	0	0	0	0	57
Staff	7	3	0	13	15	0	0	23	0	0	0	0	0	0	61
Time Point 5															
Services	2	2	1	6	5	4	5	6	0	0	0	0	0	0	31
Service users	5	2	3	18	16	13	18	21	0	0	0	0	0	0	96
Staff	6	6	5	18	15	12	15	36	0	0	0	0	0	0	113
Time Point 6															
Services	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Service users	0	0	0	11	0	0	0	0	0	0	0	0	0	0	11
Staff	0	0	0	20	0	0	0	0	0	0	0	0	0	0	20
Time Point 7															
Services	0	3	1	4	0	0	0	0	0	0	0	0	0	0	8
Service users	0	7	5	17	0	0	0	0	0	0	0	0	0	0	29
Staff	0	11	3	13	0	0	0	0	0	0	0	0	0	0	27

2.3.2 | Staff-to-resident ratio

A proforma completed by the observer was used to record the numbers of residents present and staff on duty during the 2-hr observation. The staff-to-resident ratio was obtained by dividing the number of staff by the number of residents.

2.3.3 | Staff experiences and satisfaction survey

An adapted version of the Staff Experiences and Satisfaction Questionnaire (SESQ) (Beadle-Brown, Gifford, & Mansell, 2005) was completed by staff in services. It includes three sections: (a) demographics and training; (b) experiences at work—satisfaction, role clarity and conflict, and perception of practice leadership and quality of senior management; and (c) attitudes towards people with intellectual disabilities.

2.3.4 | The observed measure of practice leadership

Developed by Beadle-Brown et al. (2015), this measure provided data on the five elements of practice leadership: (a) overall focus on the quality of life of the people supported by the service; (b) allocation and organization of staff; (c) coaching, observing, modelling and giving feedback to staff about the quality of their support; (d) reviewing performance with individual staff in supervision; and (e) reviewing team performance in team meetings. It was completed using (a) unstructured observations of the front-line manager during the service visit; (b) semi-structured interviews with the front-line manager and, where possible, direct support staff; and (c) review of paperwork associated with practice leadership, such as team meeting minutes and staff allocation. Based on this information, observers rate the five elements of practice leadership on a five-point rating scale (1 indicating no/ almost no evidence of the element being in

place to 5 indicating excellent—this element could not be improved). The scores for each element are equally weighted and tallied to give a mean score of the overall strength of practice leadership provided by the service's front-line manager. Data for this measure were collected by five researchers who had been trained by one of the authors and conducted at least two visits with a trained observer before collecting data alone. The measure was developed during the early stages of this study and was described in detail in Beadle-Brown et al. (2015). The measure has been shown to be a valid and reliable measure, with good internal consistency across several studies (Cronbach alpha over 0.9), acceptable inter-rater reliability (average Kappa value over 0.6 across the five domains) and good construct validity in terms of good discriminatory power for the main outcome measure (the active support measure)—better practice leadership was consistently associated with higher levels of active support (e.g. t (171) = 3.88, $p < .001$ in Beadle-Brown et al., 2015).

2.3.5 | Service user characteristics questionnaire

An audit questionnaire included the short form of the Adaptive Behavior Scale (SABS) Part 1 (Hatton, 2001 and, the Aberrant Behavior Checklist (ABC) (Aman, Burrow, & Wolford, 1995). The reliability and validity of the Adaptive Behaviour Scale (ABS, from which the SABS was drawn), and the ABC have been studied and reported as acceptable by their authors. The full-scale score for Part 1 of the ABS was estimated from the SABS using the formula provided in Hatton et al. (2001). Additional socio-demographic information was obtained for each service user.

2.4 | Procedures

Services were selected at each time point from a deidentified audit database of service and service user characteristics. Each database entry had a unique code for each service and service user. The unique code had been generated by a contact person in the organization, who followed instructions on how to replace names with codes in the database, and to replace names of service users on questionnaires completed by a staff member who knew the individual well with this code. The deidentified code database and questionnaires were returned to the research team in pre-paid. The deidentified coded databases were returned electronically to the research team, and the deidentified questionnaires were returned in pre-paid envelopes. The audit database was updated every 12 months, and audit questionnaires were completed for any new service users.

The audit database was used to select a sample for each time point and ascertain the total number of services managed and service users supported by each organization. Information and consent forms were sent to each organization to be distributed to selected services, staff and service users. For the study to proceed in any service, consent of at least one service user was required; then, staff questionnaires distributed to consenting staff via supervisory and managerial staff associated with each service. Completed staff questionnaires were returned directly to the researchers by mail in a pre-paid envelope.

A researcher then visited each service to conduct the 2-hr observation and complete the ASM for each consenting service user. On another day, a researcher visited the service to complete the Observed Measure of Practice Leadership. Hence, two visits were made to each service, within 2–4 months unless services shared a front-line manager, in which case only one visit was made across these services to complete the practice leadership measure.

2.5 | Analyses

Data were entered into IBM SPSS 24, and descriptive statistics and correlational analyses conducted to examine relationships among predictors. Cohen's (1988) guidelines were used to report effect sizes where appropriate. For each service user, an ASM percentage was calculated, and an ABS score derived (Hatton et al., 2001). The ABS score was used to categorize each service user as <80, 81–150 or 151 and above These data were aggregated to the service level to ascertain the number of service users in each ABS category, and the number of ABS groups. For example, if two of five service users in a service was in the 81–150 ABS group and three in the 151 + group, the number of ABS groups for that service was two. Also at the service level, a mean score was calculated across the five elements of the Observed Measure of Practice Leadership for each service or services in which the front-line manager worked. The unique codes from each organization derived from the audit database were used to ascertain the total number of service users in each service, which were grouped into two categories based on earlier studies by Tøssebro (1995) and Flynn et al., (2018): 1–6 and 7+. These aggregated data were assigned to all the individual service users within the same service(s).

The criterion for inclusion of data in the analysis was a minimum of three staff questionnaires returned for a service. Individual staff scores on job satisfaction, role clarity and conflict, perception of practice leadership, quality of senior management and attitudes towards people with intellectual disabilities were calculated for each service. These data, along with data on training in Active Support, were aggregated to the service level using a mean score for each service, which was subsequently assigned to all the individual service users within the same service. Some services were excluded from the analyses because of missing data, resulting in final totals of 461 service users from 134 services, managed by 14 organizations.

Finally, for each time point, the unique codes from the audit database were used to ascertain the total number of services and service users supported by the organization. These data, along with the number of years implementing Active Support, were included at the organizational level and subsequently assigned to all the individual service users within the same organization.

Table 2 presents data on the number of services, consenting service users and surveys from staff that were included in the final analysis at each time point. Taking into account the data clustering, there were four levels: Level 1, individual service users (461); Level 2, services (134); Level 3, the data collection time point (cross-sectionally,

TABLE 3 Characteristics of service users at each time point and the quality of Active Support

Variable	Descriptive Statistic	Time point							
		All	1	2	3	4	5	6	7
	N/n	461	41	129	98	57	96	11	29
Age (years)	M	47	40	48	46	50	47	43	45
	Range	20–87	22–63	21–87	21–81	27–70	20–81	28–65	21–70
Males		53%	51%	54%	49%	53%	56%	27%	59%
ABS score	M	150	154	149	140	163	156	122	147
	Range	22–272	36–253	31–272	22–263	67–249	31–272	36–201	72–251
ABC total score	M	27	26	29	26	26	24	46	21
	Range	0–119	0–107	0–119	0–97	0–104	0–81	3–87	0–68
Non-verbal		25%	24%	26%	27%	28%	21%	36%	10%
ASM score	M	65	63	60	60	60	80	63	67
	Range	13–100	13–97	13–97	15–97	31–85	33–100	43–87	18–92

TABLE 4 Spearman correlations between predictor variables

	ABS Score	Mean Practice Leadership	Service size - Total number of SUs	Number of ABS Groups	Staff with training in Active Support	Organization Size: Total number of services	Years implementing Active Support
ASM	0.400[b]	0.274[b]	0.030	−0.282[b]	0.161[b]	−0.234[b]	0.052
ABS Score		0.009	0.160[b]	−0.191[b]	0.078	0.002	0.030
Mean practice leadership			0.108[a]	0.038	−0.019	−0.215[b]	−0.114[a]
Service size—total number of SUs				0.326[b]	0.003	−0.107[a]	−0.171[b]
Number of ABS groups					−0.111[a]	0.160[b]	0.008
Staff with training in Active Support						−0.083	−0.006
Organization size: total number of services							0.519[b]

[a]Correlation is significant at the 0.05 level (2-tailed).
[b]Correlation is significant at the 0.01 level (2-tailed).

there were 39 groups, formed by the combination of services included across the 7 time points from the 14 organizations); and Level 4, organizations (14).

MLM regression was implemented using the MLwiN program (version 3.02; Charlton, Rasbash, Browne, Healy, & Cameron, 2017). The size and structure of the data set required the variance to be partitioned at four levels. Because of the small number of organizations the Markov chain Monte Carlo (MCMC) (Browne, 2017), estimation was used to calculate the deviance information criterion (DIC) (Spiegelhalter, Best, Garlin, & van der Linde, 2002) statistics for model comparison (Rodriguez, 2007). Using this approach, any decrease in the DIC (goodness-of-fit diagnostic) indicates a better model fit. All models were estimated using non-informative priors (Browne, 2004) with a burn-on of 1,000 and 20,000 iterations to allow each model to converge on the correct posterior distribution, and collect sufficient independent samples from the posterior

distribution to permit a good estimate. An initial null model (i.e. includes no predictor variables) was estimated which also computes an intraclass correlation coefficient (ICC): that is, the proportion of the total residual variance attributable to differences between groups, referred to as the variance partition coefficient (VPC) (Goldstein, 2003). The formula for calculating the VPC is the ratio of the variance at each level to the total variance. Subsequently, a series of multilevel models were built using a bottom-up approach (Hox, 2010; Raudenbush & Bryk, 2002). The fully adjusted model was:

$$\text{ASM Score}_{ijkl} = \beta_{ijkl} + \text{ABS Score}_{ijkl} + \text{Mean Practice Leadership}_{ijkl}$$
$$+ \text{Service Size} \left(\text{base}, 6 \text{ or less service users}\right)_{ijkl}$$
$$+ \text{Number of ABS Groups} \left(\text{base}, 1 \text{ or } 2 \text{ ABS groups}\right)_{ijkl}$$
$$+ \text{Staff with Active Support Training}_{ijkl} + \text{Total number of services}_{jkl}$$
$$+ \text{Years implementing Active Support}_{kl} + e_{ijkl}$$

Here, *i* refers to the service user, *j* the service, *k* the time point and *l* the organization. β_{ijkl} refers to the grand mean (i.e. average Active Support score for 461 service users from 134 services across seven time points from 14 organizations), and e_{ijkl} refers to a random effect.

Results were considered significant if the estimates were more than twice their estimated empirical standard error. All predictors were grand-mean-centred (the intercept was centred around the mean of the sample) to facilitate the interpretation of the intercepts and slopes, and because the influence at the higher levels (service and organization) was of primary interest (Enders & Tofighi, 2007).

3 | RESULTS

As can be seen from the descriptive statistics for service users at each time point in Table 3, service users had a varied profile of needs and characteristics, and on average, the sample was relatively able compared to those in previous studies (e.g. Mansell et al., 2013). Table 4 provides the results of the correlational analyses (at the service user level), used to examine relationships among predictors included in the final model. The largest correlation with the quality of Active Support (ASM Score) was the level of adaptive behaviour ($\rho = .400$, $n = 461$, $p < .001$), with a medium effect (Cohen, 1988).

Table 5 presents the modelling results as parameter (beta) coefficients and their standard errors, along with the model-fitted diagnostic DIC. Model 1 is the null, which includes no predictor variables, and the VPC indicated 6% of the variance in the ASM scores were accounted for by differences between organizations, 11% by differences between time points, 54% by differences between services and 29% by differences between individual service users. In Model 2, individual predictors were included. Only one predictor (ABS Score) was significant, indicating that individuals with greater adaptive behaviour received higher scores on the ASM. Model 3 included variables associated with the service; higher practice leadership scores and a higher percentage of staff who had received training in Active Support had higher ASM scores. Conversely, services with 7 + service users and services with a great deal of heterogeneity among service users (i.e. ABS scores falling within each of the three ABS groups) were associated with lower ASM scores. No other service-level variables contributed to the model. Model 4 allowed for examination of variables associated with the organization. Inclusion of two organization variables resulted in a further improvement in the model-fitted diagnostic DIC. Greater time implementing Active Support was associated with higher ASM scores. However,

TABLE 5 Parameter (beta) estimates of the multilevel models and deviance information criterion (MCMC)

	Model 1 (*SE*)	Model 2 (*SE*)	Model 3 (*SE*)	Model 4 (*SE*)
Fixed parameters				
Constant	64.711 (2.432)	65.106 (2.391)	68.815 (2.023)	67.152 (1.594)
Individual (level 1) predictors				
ABS Score		0.14 (0.012)	0.127 (0.013)	0.129 (0.013)
Service-level (level 2) predictors				
Mean practice leadership			7.889 (1.634)	7.178 (1.542)
Service size—total number of SUs (6 or less base)			−10.254 (5.158)	−10.871 (4.889)
Number of ABS groups in the service (1 or 2 ABS groups base)			−8.626 (3.367)	−6.9 (3.245)
Staff with training in Active Support			7.797 (5.191)	8.023 (4.882)
Organization-level (Level 4) predictors				
Organization size: total number of services				−0.524 (0.142)
Years implementing Active Support				0.776 (0.391)
Random parameters				
Level 4: Between organizations	31.532 (48.908)	36.593 (46.606)	19.091 (27.364)	3.651 (8.95)
Level 3: Within organizations, between-data collection time point	55.323 (42.104)	53.808 (37.995)	11.681 (18.348)	9.283 (12.799)
Level 2: Between services	272.43 (41.706)	197.74 (30.172)	153.097 (28.951)	141.78 (25.711)
Level 1: Within individuals	146.659 (10.093)	122.007 (8.401)	123.361 (9.77)	123.494 (9.751)
Deviance information criterion (DIC)	4,897.284	4,768.525	4,608.863	3,634.669
Change in DIC		128.759	159.662	974.194

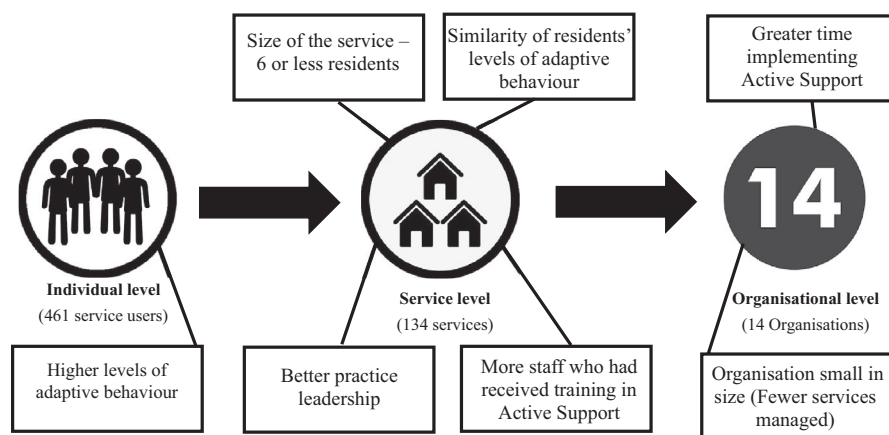*Note:* All estimates are significant at 0.05 probability level or smaller.

- **Individual level** accounts for 16% of variance within individual residents
- **Service level** accounts for 48% of the variance between services
- **Organisational level** accounts for 88% of variance between organisations
- **Time points** accounts for 83% of variance between time points

organizations larger in size (as indicated by the total number of services managed) were associated with lower ASM scores. No other organization-level variable contributed to the model.

Although there remained significant variance at each of the four levels, as indicated in Figure 1, the predictors included in Model 4 accounted for 88% of the between organization variance, 83% of the between data collection time point variance, 48% of the between service variance and 16% of the within-individual service user variance.

4 | DISCUSSION

This study extended previous research into factors predictive of the quality of Active Support using linear regression analysis, in particular, using MLM to test for variables at the person as well as group levels (service and organization). MLM allowed examination of multiple factors with potential to influence the quality of Active Support, while accounting for variability in scores across levels that occur in disability service provision.

At the service user level, the finding that only one factor, a higher level of adaptive behaviour, was predictive of better quality of Active Support is consistent with previous research (Mansell & Beadle-Brown, 2012). As the ASM provides a measure of the quality of Active Support relative to the context and characteristics of each service user, these findings suggest two things: first, staff are not skilled in tailoring Active Support to the needs of each individual, and second, staff are less skilled in supporting people with lower levels of adaptive behaviour. This explanation aligns with the finding that, at the service level, the percentage of staff trained in Active Support was also predictive of the quality of support, again as found previously (Mansell & Beadle-Brown, 2012). Originally developed in services for people with severe and profound disabilities, staff use of Active Support aims to compensate for the difficulties the people they support have in initiating

engagement and completing tasks. Of relevance to people who are already able to engage relatively independently in a range of activities and interactions, is the potential for Active Support to create more opportunities for engagement or support engagement in more complex activities. A key principle of Active Support is the adaption of support to the level of ability as well as each individual's other needs and preferences. This requires skills in, for example, giving intensive hand-over-hand assistance to individuals with profound intellectual disability, as well as knowing when and how to stand back to give a more able person time to complete a task independently. While potential levels of engagement of some people with severe disabilities may be lower than those with less severe disabilities due to their capacity to sustain physical involvement, energy and attention, the quality of Active Support should be similar.

The present study provided less clarity than previous studies about the nature of staff training, although findings did reflect previous evidence about the significance of training per se to the quality of Active Support (Flynn et al., 2018). The relevance of the type of training could not be explored because few staff reported this information, thereby precluding evaluation of previously identified advantages of classroom combined with in situ training (Flynn et al., 2018). Nonetheless, it could be argued that the effectiveness of training staff in situ as found previously (Flynn et al., 2018) is reflected in the finding that strong practice leadership is predictive of good Active Support. At least two features of practice leadership, coaching and individual performance review, are also elements of in situ Active Support training. Importantly too, the present study provides stronger evidence than previously obtained by Beadle-Brown et al. (2014) and Beadle-Brown et al. (2015) about the positive influence of front-line practice leadership on quality of Active Support.

The use in this study of the Observed Measure of Practice Leadership avoided the overestimation and social desirability effects identified when self-report measures of practice leadership have been used (Bould et al., 2018b). Further, this measure brings previously

identified factors, such as frequency of supervision and staff meetings, staff awareness of task allocation, and supportive leadership (Mansell et al., 2008) into the unifying concept of front-line practice leadership.

Service structure characteristics have received some attention in previous research. Although Flynn et al. (2018) suggested the evidence was only tentative, they identified that larger settings (within a maximum of 6 service users), and lower staff-to-user ratios facilitated the implementation of Active Support. In the present study, having seven or more service users in a service was negatively associated with the quality of Active Support and no effect related to staff-to-user ratios was found. This first finding supports Tøssebro's (1995) evidence about the importance of small-sized services and is also consistent with current policies in Australia, the UK and Ireland.

A novel finding of the present study was that the quality of Active Support was negatively predicted by very heterogeneous groupings of residents, defined in this study, as a service including individuals who fell within each of three ABS groups—ABS scores of less than 80, 81–150 and 151 and above. This finding may reflect the difficulties in tailoring Active Support to service users' individual support needs, which may be compounded in services with very heterogeneous residents. However, these three groupings span a very wide range of abilities and service user groupings comprising any two rather than three ABS groups were associated with higher Active Support scores. Hence, a complex pattern that links service user with service-level characteristics is apparent, adding to limited knowledge about groupings of service users. To date, this information has been confined to the effects of grouping people with challenging behaviour and those with severe mobility difficulties, which have shown an advantage of heterogeneity among service users (Mansell, Beadle-Brown, Macdonald, & Ashman, 2003).

This study is the first to be able to explore the impact of organizational-level variables, because almost all previous large-scale studies of Active Support were conducted in only one organization. Although data were available for only a few organizational-level variables, a large proportion of the variance between organizations (88%) was explained by the predictors in the model. The length of time since Active Support had been adopted was associated with higher quality support. Managing more services was associated with poorer quality support. This pattern may speak to Mansell et al.'s (2008) argument about the destabilizing effect of organizational change, with the converse of a stabilizing effect of having Active Support bedded down over a number of years implied. The notion of stability may extend to problems in maintaining it across a large number of services, which, in turn, could create challenges for ensuring consistent and high-quality practice leadership and maintaining training in Active Support across all staff.

4.1 | Limitations and Directions for Future Research

Some limitations with the study point to potential directions for research to further understanding of contributors to good quality Active Support. The reliance on staff self-report yielded limited data about the type of training received. In future, training items in the staff questionnaire could be complemented with data from organizational training records. In addition, staff culture, frequently proposed to influence the quality of support (Flynn et al., 2018), was not included due to the lack of a measure relevant to intellectual disability services. Notably, such a measure has recently been developed through the doctoral work of Humphreys (2018).

The service-level measures yielded data about staff characteristics and factors associated with staff motivation, sometimes referred to as "organisational hygiene" (Mansell et al., 2008, p. 399), such as staff qualifications and attitudes, but these dropped out early in analyses as they failed to predict Active Support. It is possible that some variables were accounted for by others, such as staff training. Further research that allows for exploration of how certain variables subsume others, such as through analyses of latent variables, could better explain interactions among them. Such analyses do require large sample sizes at all levels, which can prove logistically difficult, as demonstrated in the present study that relied on combining data collected over several years.

Finally, the repeated cross-sectional design did not permit the study of individual change, or factors that sustain its quality over time. Findings from the longitudinal study reported in further articles are anticipated to address these limitations.

Further research about effective ways of delivering practice leadership is warranted given its significant role in the quality of Active Support. This is particularly pertinent at a time when changes to funding formulae and recognition of the administrative burden on front-line managers (Clement & Bigby, 2012) are generating new structures for delivering practice leadership that move away from the model of one supervisor per service.

4.2 | Practice Implications

These results highlight the need for attention to the quality of Active Support for people with severe and profound intellectual disabilities and thus their engagement-related support needs. They suggest a case for a greater focus on skilling staff in tailoring Active Support to individuals with differing levels of ability, especially people with high support needs. This group often have low visibility in services, cannot complain using standard procedures, often do not have family or advocates as they are "known well by no one" (Bigby, 2008, p.148) and are poorly represented by self-advocacy organizations (Bigby & Henderson, 2018; Petri et al., 2017). The study demonstrates that the potential of Active Support to improve the quality of life of people with severe and profound intellectual disabilities is not being realized and reinforces the need for independent service audits that include observation of quality of support for service users with more severe intellectual disabilities who cannot self-report satisfaction or service quality.

These findings further demonstrate the significance of adequate funding of front-line practice leadership, which has been under threat in Australia from pricing models in the National Disability Insurance Scheme and, in the UK, from austerity measures. Practice leadership may be particularly important for motivating staff and

providing coaching to develop nuanced skills in supporting service users with varied ability levels. Strong practice leadership could also maximize the potential of Active Support, as an integral part of PBS, in improving the quality of life of service users with challenging behaviours.

5 | CONCLUSIONS

The contributions of this study emanate from being the largest investigation into Active Support in services in Australia and in evaluating the multilevel nature of factors at individual service user, service and organizational levels that predict its quality. The MLM model addressed shortcomings arising from analysis based on erroneous treatment of nested variables, such as individuals nested within services. The results highlight how characteristics of disability services interact to reveal features warranting service provider, funder or regulator attention in ensuring the delivery and monitoring of high-quality Active Support. Specific attention is needed to (a) training and practice leadership to improve staff skills in tailoring Active Support to each service user; (b) improving the quality of Active Support for people with lower levels of adaptive behaviour; (c) full coverage of Active Support training among staff teams; (d) strength of front-line practice leadership; and (e) resident groupings and size of services.

As well as providing indicators of high-quality Active Support for those involved in service production, the findings are also relevant to families and advocates of people with intellectual disabilities to assist them in selecting quality services and exercising their rights in the market place as consumers. Also evident from this study is that organizations must do more than simply claim to have adopted Active Support and that the exercise of meaningful choice about the quality of services requires some form of independent evidence about its continued implementation and quality of delivery for all service users.

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Factors associated with increases over time in the quality of Active Support in supported accommodation services for people with intellectual disabilities: A multi-level model

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ABSTRACT

Background: Disability support organisations have embraced Active Support, but it has proved difficult to embed in services.
Aims: This study aimed to identify the factors associated with increases over time in the quality of Active Support.
Method: Data were collected on the predicted variable of the quality of Active Support, and predictor variables of service user, staff and service characteristics, including practice leadership, and composition and size of services from 51 services in 8 organisations over 2–7 time points. Data were analysed using multi-level modelling.
Results: There was significant linear change in Active Support scores (group mean centered at the organisational level) over time. Individuals with lower support needs received better Active Support and those with higher support needs experienced greater increases over time. Stronger practice leadership and more staff with training in Active Support were significant predictors of the quality of Active Support. Larger services with seven or more individuals and where there was a very heterogeneous mix of individuals were associated with lower quality of support.
Conclusions: Ensuring strong practice leadership, and staff training in Active Support that emphasises the principle of adapting support to each individual's level of ability and preferences are key to delivering high levels of Active Support.

What this paper adds

This paper is the first to use a longitudinal multi-level modelling design to add new knowledge of what service providers should focus on to improve the quality of Active Support to the people they support. The study identifies the importance of all staff being trained in Active Support, and being skilled in applying the principle of tailoring support to an individual's level of ability. Training should emphasise how strategies required to support engagement of people with more severe disabilities differ from those for people with lower support needs. Organisations must ensure that staff receive good front-line practice leadership: this means coaching, regular individual feedback based on observation, ensuring staff are clear about their role on shift, have team meetings in which quality of practice is discussed and staff are frequently reminded about having a focus on the quality of life of the people they support. Organisations should ensure their services are small with six or less residents, and the mix of residents in terms of support needs does

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not include people with a wide range of support needs.

1. Introduction

Since the deinstitutionalisation reforms of the 1970s, shared supported accommodation has been the dominant form of residential support for adults with intellectual disabilities who do not live at home with their family in Australia, the United Kingdom (UK), United States (US) and Scandinavia. A body of research has demonstrated variability in the quality of life outcomes for people with intellectual disabilities living in this type of service (for review see Mansell & Beadle-Brown, 2012). The research exploring propositions about factors thought to account for this variability was reviewed by Bigby and Beadle-Brown (2018). They concluded that the strongest evidence pointed to the quality of staff support, and, in turn, staff use of an approach known as Active Support, with emerging evidence about the influence of service culture and front-line leadership.

Active Support is a practice in which an enabling relationship is utilised to facilitate the engagement of people with intellectual disabilities in meaningful activities and social relationships (Mansell & Beadle-Brown, 2012). In a systematic review and meta-analysis of studies, Flynn et al. (2018) synthesised evidence of the effectiveness of Active Support in improving the quality of staff support to people with intellectual disabilities, which lead to "significant increases in the amount of time residents spent engaged in all types of activities at home" (p. 994). Although some studies have shown that Active Support also has a positive effect on reducing depressive symptoms and challenging behaviour, and increasing adaptive skills, choice and community participation, Flynn et al.'s review failed to show convergence on the significance of change associated with any of these factors. Active Support has been argued to reduce challenging behaviour, rather than being a singular approach to supporting people with challenging behaviour, it is one component of comprehensive interventions, such as Positive Behaviour Support (McGill et al., 2018; Ockendon, Ashman, & Beadle-Brown, 2014).

1.1. Embedding Active Support in services

Active Support has been adopted widely in the UK and Australia as part of the practice framework for shared supported accommodation services (services) and is also beginning to be used in other contexts, such as schools and programs to support community participation. Organisational claims about Active Support implementation have not always been reflected in staff practices, with difficulties demonstrated across studies in embedding it in services and maintaining quality over time (Flynn et al., 2018; Qian, Tichá, & Stancliffe, 2017). For example, in an Australian study, only one of six organisations that had included Active Support as part of their practice frameworks for more than five years was found to be delivering consistently good Active Support (Mansell, Beadle-Brown, & Bigby, 2013).

Three types of factors are thought to influence the successful implementation of Active Support: staff training, staff motivation and management commitment (Mansell, Beadle-Brown, Whelton, Beckett, & Hutchinson, 2008). Flynn et al. (2018) concluded from a systematic review of 10 studies about experiences of Active Support that the strongest, yet still tentative, evidence was the impact on implementation of the type of training (i.e., advantages of combined classroom and in-situ), lower staff-to-resident ratios, working in larger services (but only to a maximum of eight residents), and organisational leadership and management support for staff. Not included in the Flynn et al. review were two studies not specifically focused on experiences of implementing Active Support but investigating practice leadership which has been identified as a factor associated with the quality of Active Support. Beadle-Brown, Bigby, and Bould (2015) found services where practice leadership was stronger provided significantly better active support ($z = 2.540$ $p = .01$, $n = 46$), and Bould, Beadle-Brown, Bigby, and Iacono (2018) found that when a practice leader was present in a service, the quality of Active Support was significantly higher, for service users with both more severe ($t (42) = 4.241$, $p = .001$) and less severe ($t (76) = 3.513$, $p = .001$) intellectual disability compared to when the practice leader was absent.

1.2. Limitations of previous studies

Few studies have investigated the quality of Active Support over a period longer than 12 months or included more than one organisation. Although organisations in Mansell et al.'s (2013) study had been implementing Active Support longer than five years, the design was cross sectional rather than longitudinal. Furthermore, research into the variables associated with Active Support has been limited by the use of single level linear regression, where all variables have been treated equally, regardless of where they sit within an organisational hierarchy with variably shared dependencies at each level. Hence, assigning mean scores obtained for staff working within a service on certain measures to every individual service user within the same service ignores statistical problems arising from data dependence within clusters (e.g., service users and services). In statistical terms, this error increases the chance for Type 1 errors (i.e., rejecting a true null hypothesis) arising from underestimating parameter estimates and their standard errors (Raudenbush & Bryk, 2002; Snijders & Bosker, 1999).

In an exploration of many of the previously identified variables associated with good Active Support (Bigby, Bould, Iacono, Kavangh & Beadle-Brown, in press) used multi-level modelling (MLM), which improves estimation of parameters because the variance of the dependent variable is partitioned into the hierarchical structure of the data (Raudenbush & Bryk, 2002). Similar to Mansell et al.'s (2013) study, however, it was a cross sectional rather than longitudinal design, with data from one time point only for each of 134 services managed by 14 organisations. The model developed by (Bigby et al., in press) enabled identification of Active Support quality predictors at three levels: (1) the individual service user - greater adaptive behaviour; (2) the service - stronger practice leadership, higher percentage of staff trained in Active Support, and fewer than seven service users with limited

heterogeneity; and (3) the organisation - smaller number of services managed and longer period implementing Active Support. However, the model did not show significant associations between quality of Active Support and variables previously explored relating to staff characteristics, such as qualifications, experience, and attitudes, and organisational hygiene, such as job satisfaction, role clarity and conflict.

1.3. Present study

The aim of the present study was to explore whether the factors identified in the literature as affecting the implementation, and thereby the quality of Active Support, predict increases in the quality of Active Support over time and identify whether these are similar to those found to be associated with the quality of Active Support at a single point in time by (Bigby et al., in press). The data reported were drawn from a large-scale study of services in Australia that commenced in 2009.

2. Materials and method

2.1. Design

The study was a repeated measures longitudinal design. The same data were collected at baseline and then intervals of 12–18 months, over periods of 2–7 years from the same 51 services managed by eight organisations. The predicted variable was the quality of Active Support, with predictor variables of service user, staff, service and organisational characteristics. The study began with six organisations, with others joining as it progressed. Thus, not all organisations participated for the same period of time: data were collected at baseline and six subsequent time points for one organisation, five for two organisations, three for two organisations, two for one organisation, and one for two organisations. Rather than calendar years or years in the study, we refer to data collection at baseline and subsequent *time points*, reflecting that a similar trajectory of repeated measures occurred for each organisation, but did not coincide with the same calendar year for all organisations.[1]

The La Trobe University Human Research Ethics Committee (HREC) approved the study. Staff and service users with capacity provided their own consent; for service users without consent capacity, permission was obtained from a person who usually made decisions for them, typically a next-of-kin or senior staff member of the service.

2.2. Participants and settings

The eight participating not-for-profit organisations operated in five different Australian states. As Table 1 shows, organisations had been implementing Active Support for periods ranging from 1 to 14 years, and managed from 5 to 34 services.

Depending on the size of the organisation, all or a sub-set of services were included in the study. Inclusion criteria were services providing 24 -h support for 1–12 service users ($M = 4.8$) living in an ordinary house dispersed among other houses in the community, and having at least one service user consenting to participate. Table 2 shows the number of services and service users with intellectual disabilities who were included at baseline and each subsequent time point for each organisation. Changes in service users' place of residence or ill health that prevented observational data collection at a scheduled time caused numbers to fluctuate. Consequently, the data set is unstructured, in that service users have an unequal number of observation data collection points. Change in the quality of Active Support was measured for two time points for just under half (46%) of service users, three time points for 29 (18%) service users, four time points for 32 (19.9%) service users, five time points for 16 (9.9%) service users, six time points for five (3.1%) service users, and all seven time points for only five (3.1%) service users.

2.3. Measures

2.3.1. Service user characteristics

Data about service users were collected through a staff-completed audit questionnaire, which included questions about gender, date of birth and other disabilities present. It also included the short form of the Adaptive Behavior Scale (SABS) Part 1 (Hatton et al., 2001) to determine level of support needs and two specific items to indicate general receptive and expressive communication skills. The Aberrant Behavior Checklist (ABC) (Aman, Burrow, & Wolford, 1995) was used to measure level of challenging behaviour. The full-scale score for Part 1 of the Adaptive Behaviour Scale (ABS) was estimated from the SABS using the method described by Hatton et al. (2001). Authors of these measures have reported them to have acceptable reliability and validity.

2.3.2. Staff experiences and satisfaction

The Staff Experiences and Satisfaction Questionnaire (SESQ) (Beadle-Brown, Gifford, & Mansell, 2005) was used in an adapted form. The elements used in this study included Section A items addressing staff demographics and training; Section B items regarding experiences at work in terms of satisfaction, role clarity and conflict and staff perception of management; and a shortened 13-item version of the original Section D scale on attitudes towards people with intellectual disabilities. The scales used are described in detail

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[1] For example, baseline data for seven organisations were collected in 2009/10, and the collection was repeated at time point 2 which was in 2011/12, and time point 3 was 2013 and so on; for organisations that joined the study in 2015, baseline was 2015 and time point 2 was 2016.

Table 1

Size of each organisation and number of years since Active Support first implemented at time of 2017 data collection.

Organisation	Services	Service users (total)	Years of Active Support
1	5	21	8
2	15	28	14
3	5	18	13
4	34	155	12
5	7	29	5
6	10	62	5.5
7	7	42	1
8	31	142	1

Table 2

Number of services, consenting service users (SUs) and staff surveys from each organisation included in the analysis at each time point.

Time Point	Frequencies	Organisation								Total
		1	2	3	4	5	6	7	8	
Baseline	Services	5	3	2	6	7	6	6	2	**37**
	SUs	16	8	6	23	22	20	29	6	**130**
	Staff	25	11	7	42	36	21	26	9	**177**
2	Services	5	3	2	5	6	6	5	2	**34**
	SUs	18	9	7	11	19	21	27	6	**118**
	Staff	20	12	8	32	24	21	22	11	**150**
3	Services	5	5	3	0	6	7	0	0	**26**
	SUs	18	14	8	0	21	25	0	0	**86**
	Staff	22	22	11	0	33	42	0	0	**130**
4	Services	5	7	5	6	0	0	0	0	**23**
	SUs	17	15	12	25	0	0	0	0	**69**
	Staff	19	26	18	28	0	0	0	0	**91**
5	Services	5	7	5	0	7	7	0	0	**31**
	SUs	19	18	18	0	25	29	0	0	**109**
	Staff	18	28	21	0	32	26	0	0	**125**
6	Services	2	0	0	6	0	0	0	0	**8**
	SUs	6	0	0	14	0	0	0	0	**20**
	Staff	9	0	0	23	0	0	0	0	**32**
7	Services	2	5	4	0	0	0	0	0	**11**
	SUs	6	9	13	0	0	0	0	0	**28**
	Staff	10	22	15	0	0	0	0	0	**47**

in Mansell et al. (2008, pp 401-402) along with reliability and validity from that study. Cronbach's alpha for the 13-item attitude scale from a large scale evaluation involving over 550 staff was 0.856

2.3.3. Staff-to-resident ratio

A researcher completed a proforma at the time of observation in the service, recording information about the number of residents living in the service and of staff on duty.

2.3.4. Practice leadership

The Observed Measure of Practice Leadership developed by Beadle-Brown et al. (2015) was used to measure the quality of five elements: (1) the focus, overall, on the quality of life of all service users; (2) the allocation and organisation of staff to provide the support people need; (3) the extent of coaching, observing, modelling and giving feedback; (4) performance reviews with individual staff during supervision; and (5) performance reviews of teams during team meetings. This measure has been shown to be a reliable and valid measure with good internal consistency, inter-rater reliability and construct validity (Beadle-Brown et al., 2015). To complete the measure, a researcher interviewed the front-line manager, reviewed paperwork associated with practice leadership and observed within the service for 15–30 minutes, then rated each of the elements on a five-point scale (anchored by 1 = no or almost no evidence of the element being in place and 5 = excellent – could not really improve on this element). A mean score was calculated from scores summed across the elements, and represented the overall strength of practice leadership in a service. The measure was implemented by five researchers; each had been trained by one of the authors and conducted at least two visits with one other trained observer before collecting data alone.

2.3.5. Quality of Active Support

The predicted variable was the quality of Active Support, determined using the Active Support Measure (ASM) (Mansell, Elliott, & Beadle-Brown, 2005). The authors of the ASM have reported the measure to have acceptable reliability and validity, with a Cronbach

alpha over 0.9 in most studies (see for example, Beadle-Brown, Hutchinson, & Whelton, 2012; Mansell, Beadle-Brown, Macdonald, & Ashman, 2003). The measure was completed according to guidelines provided by Mansell et al. (2005) and the fourth author was involved in developing the measure, preparing the guidance and training the researchers in the current study. The ASM comprises 15 items addressing the quality of staff support to individual service users and their skills in enabling them to be engaged in meaningful activities and relationships. A researcher completes the ASM at the end of 2 h of observation. During the observation, detailed notes are taken about the type of activities and nature of the contact observed. These notes are then used to rate the ASM items immediately after the observation. Each of the 15 items are rated on a scale of 0 (poor, inconsistent support) to 3 (good, consistent support), in line with the scoring guidelines provided by Mansell et al. (2005), with tallies across items converted to a percentage. The total possible raw score for each observed service user is 45, unless the two items relating to challenging behaviour are scored as 'Not applicable' (i.e. the service user was not observed to display challenging behaviour), in which case the maximum possible score is 39. A percentage score of 66.66 is considered a good level of Active Support (Mansell & Beadle-Brown, 2012).

Observations were conducted by a team of 13 observers over the course of the study, including the first author, who, along with the second and fourth author trained the others. Inter-observer reliability determined for each of the 15 items of the ASM within the group of seven observers involved in the 2009 data collection (and the two observers in 2010) was 60% on average (range 29–98%, *number of paired scores* = 24). Kappa was on average .32 (this low score was explained, in part, by low occurrences of Active Support). Reliability on the ASM was not conducted for data collected in 2012 because all observations were by one observer (first author), who was involved in all years of the study. In 2014, there was 84% average agreement across three observers (range 73–100%, $n = 15$), and average Kappa was .61 (range .21–.80). In 2015, 2016 and 2017, for four observers, there was 66% average agreement (range 55–100%, $n = 10$); 58% (range 30–100%, $n = 10$) and 87% (range 69–100%, $n = 26$) respectively. Kappa was on average .55 (range .20–.100); .51 (range .29–.100) and .73 (range .53–.100), respectively. Although across the years, agreement was found to be low for some ASM items, paired T-Tests showed there were no significant differences for the overall ASM scores (range $p = .271$–.385).

2.3.6. Procedures

For each organisation, an audit database was created and sent to a contact person from each organisation, with instructions to (a) complete the coding of service users identified within the database; (b) distribute questionnaires for all service users in the organisation, with requests for a staff member who knew the individual well to complete and return to the contact person; (c) remove the service users name on each questionnaire and leave only a unique code from the database; and (d) return completed audit questionnaires to the research team in the pre-paid envelopes provided.

Each service was also sent staff questionnaires with a request that they be distributed to staff, including the front-line manager. Each staff member was invited to individually complete and return a questionnaire in a pre-paid envelope. A researcher visited each service, usually between 4:00-6:00 pm on a weekday to conduct the observation and complete the ASM. On another day, a researcher visited the service and completed the Observed Measure of Practice Leadership. Every year, therefore, two visits were made to each service within a 2–4 month period, with the exception of services that shared a front-line manager with another participating service, in which case the measure was completed during a second visit to only one of these services.

2.3.7. Analyses

Data were entered into IBM SPSS 24. Descriptive statistics and correlational analysis were conducted, with Cohen's (1988) guidelines used to report correlation effect sizes. For each service user, the percentage ASM score was calculated, and an Adaptive Behaviour Scale (ABS) Part 1 score derived from the short adaptive scale as described by Hatton et al. (2001). The ABS scores were recoded initially into two groups below 151 and 151 and above. This rough cut off has been used in other studies to indicate more or less severe disabilities (see Mansell et al., 2013). However, preliminary analysis indicated that there appeared to be a lower cut off of an ABS score of 80 and one organisation only supported people below that cut off. As such the ability grouping was revised to include ABS score less than 80, ABS score between 81–150, or ABS score of 151 and above. The ABS groups were aggregated to the service level representing the number of ABS groups supported by that service. For example, in a service with four service users with two scoring an ABS of less than 80 and two scoring 81–150, the total number of ABS groups was two. Also, at the service level, a mean practice leadership score was calculated across the five elements of the Observed Measure of Practice Leadership for each service(s) in which the front-line manager worked. The unique codes from each organisation derived from the audit database were used to ascertain the total number of service users in each service, which were grouped into two categories: 1–6 and 7 + . This cut off is based on earlier studies by Tøssebro (1995) and Flynn et al. (2018). The aggregated data for ability group, practice leadership score and size of setting were assigned to all the individual service users within the same service(s).

For the staff questionnaires, data were included in the analysis only if at least three staff surveys were returned for a service at each time point. Individual staff data on job satisfaction, role clarity and conflict, perception of practice leadership, quality of senior management, attitudes towards people with intellectual disabilities and training in Active Support were aggregated to the service level through a mean score for each service, and subsequently assigned to all the individual service users within the same service. In terms of staff training, although staff reported whether or not they had training in Active Support, few answered the question about the type of training (i.e. classroom and or in-situ); hence, type of training was not included in the analysis. Table 2 shows the number of staff at baseline and each time point included in this analysis. Due to missing data, two service users were excluded from the analyses, but no services were excluded, resulting in final totals in the Multi-level modelling (MLM) of 194 service users from 51 services. The fluctuations shown in Table 2 reflect differences in the number of year's organisations (and their services) were involved in the study.

Taking clustering into account, the data structure had five levels: baseline and six subsequent time points (level 1) nested within

194 individual service users (level 2) nested within 51 services (level 3), nested within eight organisations (level 4), nested within five states (level 5). Because relatively few services were distributed across eight organisations and five states, the ASM scores were group mean centred (Organisation Mean –ASM Score = ASM GMC) at the organisational level. Organisations are nested within states, so this approach resulted in a response variable ICC of zero at both the organisation (level 4) and state (level 5) levels (Enders & Tofighi, 2007).

   MLM regression was implemented using the MLwiN program (Version 3.02; Charlton, Rasbash, Browne, Healy, & Cameron, 2017). In light of the size and structure of the data set, and the ICC of zero at levels 4 and 5, the variance required partitioning at three levels (Rodriguez, 2007), thus the Deviance Information Criterion (DIC) (Spiegelhalter, Best, Garlin, & van der Linde, 2002) statistics for model comparison was calculated using the Markov chain Monte Carlo (MCMC) (Browne, 2017). Using this approach, any decrease in the goodness of fit diagnostic, the DIC, indicated a better model. All models were estimated using non-informative priors (Browne, 2004) with a burn-on of 1000 and 20,000 iterations to allow each model to converge on the correct posterior distribution, and collect sufficient independent samples from the posterior distribution to permit a good estimate. An initial null model was estimated, which computes an intraclass correlation coefficient (ICC): that is, the expected (population) correlation between two randomly chosen elements in the same group (Hox, 2010). Using a bottom-up approach, a series of multi-level models were then built (Hox, 2010; Raudenbush & Bryk, 2002). It was necessary to specify starting values for the level 3 variance (set to 1) and covariance (set to 0) prior to fitting the model with MCMC to ensure the variance-covariance matrix was positive definite. The fully adjusted model was:

$$\text{ASM GMC Score}_{ijk} = \beta_{ijk} + \text{Time Point}_{ijk} + \text{ABS Score}_{ijk} + \text{Service Size (base, 6 or less service users)}_{ijk}$$

$$+ \text{Time Point*Service Size}_{ijk} + \text{Number of ABS Groups}_{ijk} + \text{Mean Practice Leadership}_{ijk}$$

$$+ \text{Staff with Active Support Training}_{ijk} + e_{ijk}$$

In this model, i refers to the time point, j to the service users and k to the services. β_{ijk} refers to the grand mean (i.e., average Active Support GMC score across the seven time points from 194 individuals, across 51 services) and e_{ijk} to a random effect.

   Significant results were reported for estimates that were more than twice their estimated empirical standard error. All predictors were grand mean centred (in order that the intercept be centred around the mean of the sample) to facilitate interpretation of the intercepts and slopes, and because the influence of the service level was of primary interest (Enders & Tofighi, 2007).

3. Results

   Descriptive statistics for the 194 service users included in the analysis along with the Active Support scores for all time points are presented in Table 3. As can be seen from this table, over the time points, service user mean age increased from 40 to 48 years, the proportion of males decreased, and there was some variability in ABS score, but less so in ABC scores. The proportion of service users who were non-verbal was relatively stable at around a third, but decreased to 18% at the final time point (perhaps accounted for by a drop-in sample size). Of particular note in Table 3 is the increase in the means for the ASM, which remained above the level of 66.66% considered to be good Active Support from time point 5. At most time points, the range in ASM scores tended to be large, but became much narrower at time point 6, with a higher low score indicating an overall shift up for all service users represented. Hence, ASM scores became less variable, particularly over the final two time points.

   Relationships among the predictor levels included in the final model were examined using correlational analyses (Spearman) at the overall (across all seven time points) service user level and are shown in Table 4. The largest correlation with the quality of Active Support (ASM Score GMC), according to Cohen's (1988) guidelines, was the level of adaptive behaviour (ABS) ($\rho = .317$, $n = 560$, $p < .001$), with a medium effect (Table 4).

Table 3
Characteristics of service users at baseline and each time point and the quality of Active Support.

Variable		Time Point						
		Baseline	2	3	4	5	6	7
	N/n	*130*	*118*	*86*	*69*	*109*	*20*	*28*
Age (years)	*M*	40	42	42	41	44	44	48
	Range	18 to 76	18 to 77	19 to 78	17 to 66	19 to 81	28 to 66	29 to 70
Males		53%	48%	43%	41%	42%	25%	39%
ABS score	*M*	140	134	133	155	139	129	155
	Range	22–260	24–251	22–260	34–251	22–263	36–244	88–216
ABC total score	*M*	29	25	23	31	22	44	26
	Range	0–103	0–93	0–110	0–110	0–110	3–87	0–81
Non-verbal[1]		32%	37%	36%	26%	34%	35%	18%
ASM score	*M*	45	55	57	61	67	69	75
	Range	7–98	10–92	13–92	8–92	18–100	18–87	54–92

[1] Refers to the service users who did not use speech, but relied on non-speech modes of informal (e.g. gestures, facial expressions, body language, posture) or formal (e.g., signs, picture symbols) means of communication.

Table 4

Spearman correlations between predictor variables.

	ABS Score	Service size (SU)	Number of ABS groups	Mean Practice Leadership	Staff with Active Support Training
ASM Score GMC	.317[b]	−.135[a]	−.200[b]	.190[b]	.174[b]
ABS Score		.102[a]	−.103[a]	−0.049	−.022
Service size - Total number of SUs			.262[b]	.043	−.145[b]
Number of ABS groups				.027	.011
Mean Practice Leadership					.007

[a] Correlation significant at the 0.05 level (2-tailed).
[b] Correlation significant at the 0.01 level (2-tailed).

Tables 5 and 6 show the modelling results as parameter (beta) coefficients and their standard errors, along with the model-fitted diagnostic DIC. One purpose of longitudinal three-level modelling was to assess service (level 3) influences on the individual average (level 2) change over time (level 1). The first model shown in Table 5, therefore, provides an unconditional three level model, which enabled three ICCs (see Hoffman, 2015; Snijders & Bosker, 2012) to be calculated to assess the influence of service characteristics on change in the quality of Active Support (ASM score GMC) over time. The proportion of total variable variation that occurred between ASM GMC scores across all the services was 16% (73.47/ [375.24 + 1.51 + 73.47]). This level 3 ICC estimate can be interpreted as the expected correlation between two ASM GMC scores drawn completely at random from any time point, from two service users within the same service. An alternative level 3 ICC was 98% (73.47 / [73.47 + 1.51]), interpreted as the expected correlation between the mean (i.e., averaged across the repeated measurements) ASM GMC scores from two service users drawn completely at random from the same service. The level 2 ICC was 17% ([1.51 + 73.47] / [375.24 + 1.51 + 73.47]), interpreted as the expected correlation between two repeated measurements sampled from the same service user.

In the second model shown in Table 5, time point was centred at baseline and fixed to establish the average change in the ASM score over time across all 194 service users nested within 51 services. Fig. 1 shows that, on average, there was a linear increase in ASM scores over time. The average ASM GMC score at baseline for all service users nested within all services was −10.06%, and the constant expected rate of change in the score was 4.68 percentage points per time point after baseline. However, the first question to address was how to best model and quantify the change in ASM GMC score over time, as with repeated measurements, T - 1 fixed effects, and T - 2 random effects could be needed to accurately model change (Snijders & Bosker 1999). As such we looked at polynomial trend components (i.e. linear, quadratic, and cubic) and the DIC indicated linear-only (6512.601) more accurately modelled the change, as there was a better model fit compared to quadratic linear (6513.209), or linear, quadratic, and cubic polynomial components (6513.518). Furthermore, when the quadratic and cubic effects of time point were allowed to vary randomly across service users within services at Level 2 and across services at Level 3 the models failed to converge. This, as Peugh and Heck (2017) stated, is likely to be due to attempting to "over-fit" the model.

In light of the repeated measurements collected from service users (within services) over time, differences in rates of change (using linear polynomial trend) between service users were determined. In the third model shown in Table 5, time point was allowed to vary across individual service users at level 2. The average ASM GMC score and expected linear change remained relatively unchanged. In contrast, the level 1 residual variance decreased by 13% and the average ASM GMC score variation across services decreased 3%, while the variation in the mean ASM GMC scores across service users within services (level 2) at baseline increased from that of the previous model due to estimating random effects at level 2, rather than variation being fixed, as in the previous model. Results show that linear increases in scores on the ASM GMC differed significantly across all service users within all services. ASM GMC scores for 95% of service users within all services changed, on average, by differences from −1.59 and 11.07, around a mean increase of 4.74 points per time point after baseline. Furthermore, the intercept/slope covariance estimate (−29.41) was

Table 5

Parameter (beta) estimates of the multi-level models and deviance information criterion (MCMC) on the effect of time on Active Support Score GMC.

|	Model 1 (S.E)	Model 2 (S.E)	Model 3 (S.E)	Model 4 (S.E)
Fixed parameters				
Intercept	1.44 (0.44)	−10.06 (1.81)	−10.16 (1.91)	−9.86 (2.53)
Data collection time point – Centred at Baseline		4.68 (0.39)	4.74 (0.46)	4.67 (0.79)
Random effects				
Level 1 (Time Point): Residual	375.24 (20.04)	307.18 (16.67)	267.55 (16.95)	251.20 (15.28)
Level 2 (Individual SU's): Intercept	1.51 (3.66)	0.240 (4.86)	94.14 (32.41)	8.35 (11.55)
Level 2 (Individual SU's): Covariance			−29.41 (9.68)	−61 (1.72)
Level 2 (Individual SU's): Slope			10.43 (3.36)	0.80 (0.50)
Level 3 (Services): Intercept	73.47 (22.56)	99.99 (27.85)	97.00 (27.48)	257.33 (70.26)
Level 3 (Services): Covariance				−58.92 (19.09)
Level 3 (Services): Slope				21.46 (6.46)
Deviance Information Criterion (DIC)	6656.320	6512.601	6478.248	6410.465
Change in DIC		143.719	34.353	67.783

All estimates are significant at 0.05 probability level or smaller.

Table 6

Parameter (beta) estimates of the multi-level models and deviance information criterion (MCMC) with the level 2 and level 3 predictor variables.

	Model 5 (S.E)	Model 6 (S.E)	Model 7 (S.E)	Model 8 (S.E)
Fixed parameters				
Intercept	−9.89 (2.33)	−8.495 (2.54)	−10.13 (2.43)	−5.69 (2.44)
Time point – Centred at Baseline	4.67 (0.80)	4.50 (0.79)	5.15 (0.75)	4.76 (0.99)
Individual (Level 2) predictors				
ABS Score	0.12 (0.02)	0.12 (0.02)	0.12 (0.02)	0.12 (0.02)
Service level (Level 3) predictors				
Service size - Total number of SUs (6 or less base)		−15.51 (4.91)	7.21 (7.41) [N.S]	14.76 (7.94) [N.S]
Time Point X Service size - Total number of SUs (6 or less base)			−9.70 (2.55)	−10.32 (3.40)
Number of ABS groups in the service (1 or 2 ABS groups base)				−10.09 (3.49)
Mean practice leadership				4.18 (1.11)
Staff with training in Active Support				5.61 (2.20)
Random effects				
Level 1: Residual	236.67 (13.50)	234.41 (13.29)	232.70 (13.29)	227.31 (15.61)
Level 2: Intercept	2.74 (3.39)	2.45 (3.11)	2.62 (3.47)	2.73 (3.71)
Level 2: Covariance	−0.45 (0.85)	−0.43 (0.88)	−0.43 (0.90)	−0.46 (0.92)
Level 2: Slope	0.63 (0.38)	0.63 (0.40)	0.64 (0.38)	0.76 (0.48)
Level 3: Intercept	212.92 (61.62)	253.16 (70.84)	218.13 (62.56)	185.05 (61.05)
Level 3: Covariance	−46.81 (17.42)	−58.73 (19.34)	−46.45 (16.39)	−63.99 (22.91)
Level 3: Slope	21.21 (6.64)	21.86 (6.61)	17.57 (5.45)	30.57 (10.11)
Deviance Information Criterion (DIC)	6357.57	6350.727	6343.939	4706.53
Change in DIC	52.895	6.843	6.788	1637.409

All estimates, except where indicated by [NS] are significant at 0.05 probability level or small.
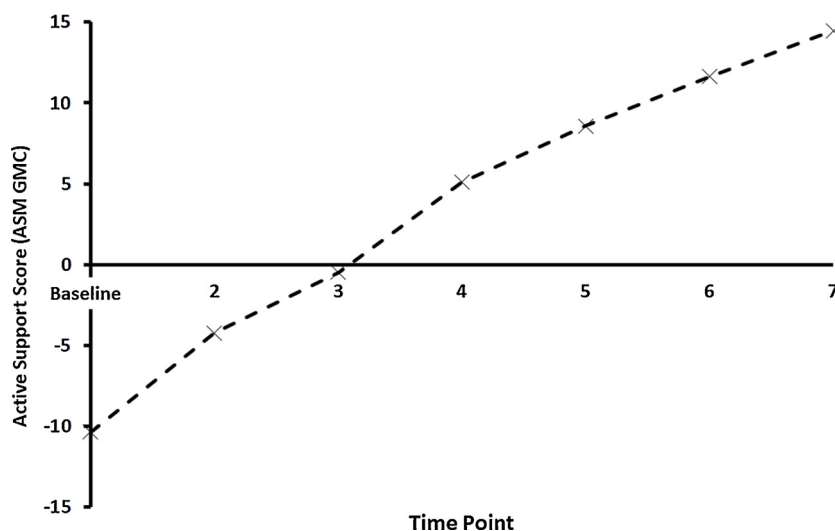
Fig. 1. Change in Active Support score over time.

significant, and, together with significant and positive slope for linear time (4.74), shows that the rate of increase in ASM GMC scores over time was, on average, slower for service users within services who had higher ASM GMC scores at baseline.

To determine whether there were differences in rates of change across services, time point was allowed to vary randomly both across service users and services in the fourth model, shown in Table 5. The significant intercept variance (257.33) remained, but significant variation over time on ASM scores across services (21.46) were found. ASM GMC scores for 95% of services changed on average by −4.41 and 13.75, around a mean increase of 4.67 points per time point after baseline. Furthermore, the intercept/slope covariance estimate at level 3 (−58.92) was significant, and together with significant and positive slope for linear time (4.67), shows that the rate of increase in ASM GMC scores over time was, on average, slower for services with higher ASM GMC scores at baseline. The results of model 4, however, show significant linear change in ASM GMC scores occurred over time, and the linear increase varied randomly across both service users within services and across services.

In the fifth model shown in Table 6, service user ABS scores were added to the three-level analysis as a level 2 predictor variable (as a fixed effect) and the main effect was significant (0.12). At baseline, service users with lower support needs, as measured by the ABS, showed, on average, ASM GMC scores that were 0.12 points higher than scores for service users with greater support needs. The time point by ABS score was not significant (-0.017), indicating that the change per time point for service users with lower support needs beyond baseline was not significantly different to service users with higher support needs. When the ABS main effect was
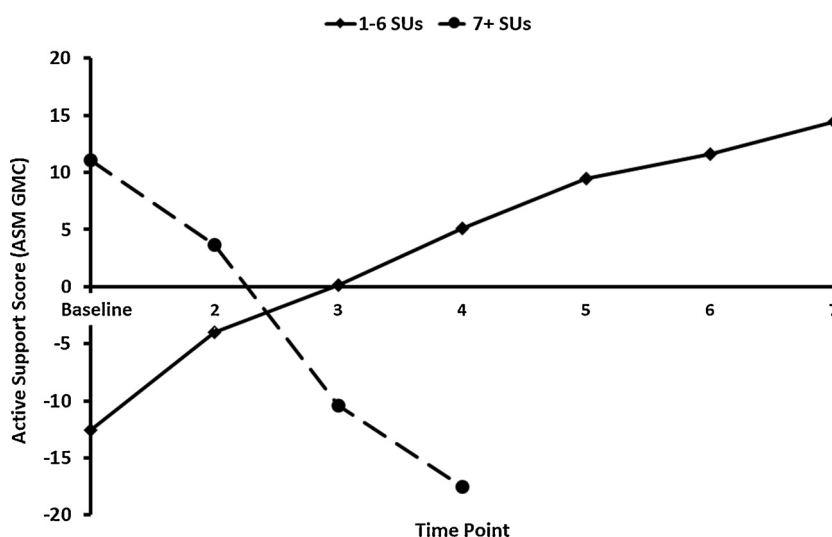
Fig. 2. Two-way interaction between time point and service users in a service.

allowed to vary randomly at level 3, the result was not significant, which can be interpreted to mean that the main effect of ABS on the ASM GMC score did not vary significantly across services.

No other level 2 predictors were shown to have a significant effect on the ASM GMC score (i.e., age, challenging behaviour). Therefore, in the sixth model shown in Table 6, one level 3 predictor variable was added, resulting in a main effect of service size – Total number of service users in a service: at baseline, services with seven or more service users showed, on average, ASM GMC scores that were 15.51 points lower than the scores for services with 1–6 service users. There was, however, a significant interaction effect between time point and service size, as shown in model 7 in Table 6: change in ASM GMC scores beyond baseline for services with 7 or more people was, on average, 10.32 points lower than services with 1–6 people. This significant interaction is presented graphically in Fig. 2. However, the significant interaction resulted in the main effect becoming non-significant.

The final model shown in Table 6 included additional level 3 predictors. Services with higher practice leadership scores and a higher percentage of staff who had received training in Active Support had higher ASM GMC scores. Conversely, as shown in Fig. 3, in services with a great deal of heterogeneity amongst service users (i.e., ABS scores falling within each of the three ABS groups), ASM GMC scores were on average 10.09 points lower than the scores in services with only one or two ABS groups. No other level 3 predictors or interactions were shown to have a significant effect on the ASM GMC score. However, the inclusion of the additional level 3 predictors led to the main effect of number of service users in a service becoming positive, after having been negative, and significant (in Model 6). This finding is not accurately reflected in the graph of the significant two-way interaction between time point and number of services users in a service, in Fig. 2, most likely because only 4/51 services had seven or more services users living together.
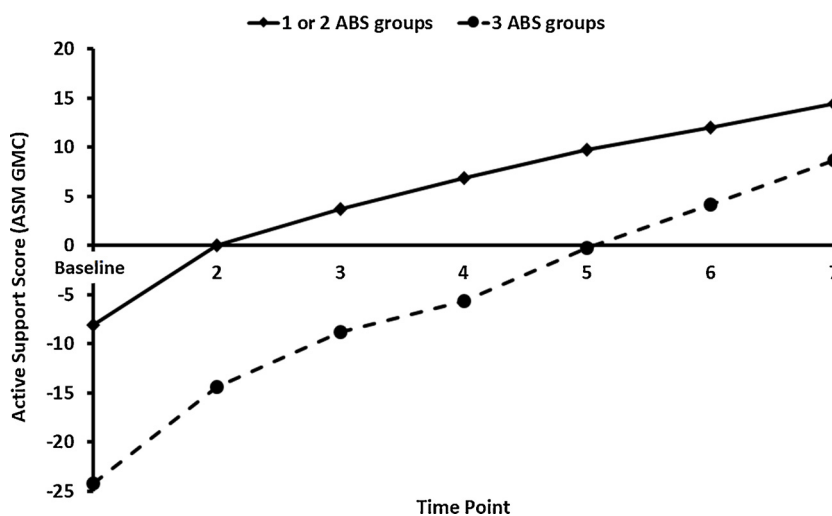

Fig. 3. Main effect for number of ABS groups in a service.

A pseudo-R^2 effect size estimate was calculated using a three-step process to ascertain the overall effect size modelled by the main and interaction effects (Hox & Roberts, 2011; Peugh & Heck, 2017). First, we obtained model-predicted ASM GMC scores for all 194 residents using the intercept and slope estimates, as follows.

$$\text{ASM GMC Score}_{ijk} = -5.69 + 4.76\,(\text{Time Point}_{ijk}) + 0.12\,(\text{ABS Score}_{ijk}) + 14.76\,(\text{Service size} - \text{Total number of SUs}_{ijk})$$
$$- 10.32\,(\text{Time Point*Service Size}_{ijk}) - 10.09\,(\text{Number of ABS Groups}_{ijk}) + 4.68\,(\text{Mean Practice Leadership}_{ijk})$$
$$+ 5.61\,(\text{Staff with Active Support Training}_{ijk})$$

Second, we obtained Pearson correlations between the model-predicted ASM GMC scores in step 1 (ASM GMC Score$_{Predictedijk}$) with the observed ASM GMC scores (ASM GMC Score$_{Observedijk}$) in the dataset. Third, we squared the resulting Person Correlation $[r_{Predicted,\ Observed}\ ^2]$ to produce the pseudo-R^2 value. Results showed that $R^2_{Pseudo} = [.5962]^2 = .36$; 36% of the variance in ASM GMC scores across the $I = 7$ time points for all J residents, across all K services was modelled by the main and interaction effects. However, the equation above contains just fixed effect estimates, not the random effect estimates, and because of the choice of centreing, the predicted ASM GMC scores are based on the assumption that the individual represented by a mean ABS score is living in a service where the practice leader scores at the sample mean on the practice leader measure, and in which the percentage of staff trained in Active Support is at the sample mean. Consequently, the R^2_{Pseudo} value obtained is considered a conditional effect size (Peugh & Heck, 2017).

3.1. Summary of results

Scores on the ASM GMC increased, on average, from baseline to the other time points, and Fig. 1 showed that a linear-only trend captured that change. Further, the linear increase in ASM GMC scores, was, on average, slower for individuals within services and across services with higher ASM GMC scores at baseline. In terms of the influence of individual and service variables on ASM GMC scores, greater levels of adaptive behaviour (ABS score), higher practice leadership scores, and a higher percentage of staff who had received training in Active Support were significant predictors of higher levels of Active Support; conversely, services with high heterogeneity amongst service users' (3 ABS groups) were associated with lower quality of support. There was also a significant two-way interaction on ASM GMC scores and service size, such that increases in ASM GMC scores occurred only in services with 1–6 service users, and not in those with 7 or more (Fig. 2). The Psuedo-R^2 estimate was used as an overall effect size and this indicated that the main and interaction effects in the model account for 36% of the variance in ASM scores.

4. Discussion

These findings confirm those from previous cross-sectional studies, which have used either MLM (Bigby et al., in press) or regression analysis (Mansell & Beadle-Brown, 2012), that show higher levels of adaptive behaviour are predictive of the quality of Active Support. A novel finding was the increase in Active Support over time, regardless of level of adaptive behaviour, with the rate of change not differing significantly across service users according to support needs. It would seem, however, that it is more challenging for staff to support people with more severe impairments. Consistent use of Active Support is positively associated with increased service user engagement in meaningful activities and relationships, which in turn is central to various domains of quality of life such as personal development, social inclusion, physical and emotional well-being. Accordingly, this study provides further evidence that service providers are failing to realise the full potential of Active Support to increase the quality of life of service users with severe intellectual disabilities (Bigby et al., in press).

The difficulty that staff have in tailoring support to individual needs was evident from our finding that greater heterogeneity amongst services users, such that there are more than two ability groups (as per ABS categories) in a service, is negatively associated with both the quality of Active Support and its rate of improvement over time. This association was also found in the cross-sectional data by (Bigby et al., in press). It may be particularly challenging for staff working in services in which service users' impairments range across the full spectrum from profound to mild. This range of support needs requires staff to switch between intensive hand-over-hand assistance to support engagement, to standing back to give time for more able people to complete tasks, or creating opportunities for them to engage in more complex tasks. These findings affirm the need to address apparent skill shortfalls among staff in tailoring Active Support to each individual service users' needs, and in tailoring Active Support practice to people with more severe or profound levels of intellectual disability identified by (Bigby et al., in press).

Findings from the present study strengthen evidence from previous studies of variables at the service level (stronger practice leadership, higher percentage of staff with Active Support training) being associated with higher levels of Active Support (Mansell et al., 2008; Bigby et al., in press). In addition, they reveal for the first time, using an observational measure of practice leadership, the association between these variables and improvements in Active Support over time, as well as its rate of change. Accordingly, the findings add to the growing body of evidence about the significance of both front-line practice leadership and staff training in Active Support to the quality of staff support. In contrast, other staffing-related variables that previously have been proposed (qualifications, experience, attitudes, satisfaction, role clarity, role conflict, and perceptions of the quality of leadership) were explored but not found to be significant predictors of the quality of Active Support over time. The implications of similar findings from the cross-sectional data were discussed by (Bigby et al., in press), who suggested the need for service delivery organisations to focus staff training on tailoring Active Support according to service users' impairment levels, and to tackle staff motivation through development of strong

front-line leadership. Due to missing data from staff about the type of training they had received, these results do not directly address whether training should be classroom or in-situ. However, given that a core element of practice leadership is in situ coaching, present study findings lend further support to previous studies that have demonstrated the advantages of a combination of classroom and in-situ Active Support training (see Flynn et al., 2018).

The negative association between service size (more than six service users) and quality of Active Support found in the cross-sectional study by (Bigby et al., in press) was also found in this longitudinal study, while further demonstrating that Active Support scores appear to increase in smaller services over time and decrease slightly over time in larger services. Combined, the studies support evidence from Flynn et al. (2018) and Tøssebro (1995) about the importance of service size to quality of life outcomes. It may be that six service users is the maximum threshold number, beyond which staff experience difficulties in providing consistent Active Support.

The finding that the mean ASM GMC scores increased at each time point after baseline, reaching a peak at the last time point support the previous finding of a positive association between the quality of Active Support and length of time since its implementation in an organisation (Bigby et al., in press). A caveat to interpreting this finding is that the rate of increase in ASM GMC scores was not uniform, but rather slower in services with higher mean ASM GMC scores at baseline. Perhaps it is unsurprising that most increase is likely for services with more scope for change. Importantly too, there was not necessarily a relationship between time points and the period over which an organisation had been implementing Active Support. Although time since Active Support had been implemented was not measured directly, there were indications that over time, staff may become more skilled in catering to diverse needs: first there was reduced variability in Active Support scores at the last two time points, and second there was a trend suggesting a reduced difference across services with more versus less variability in service user ability levels (see Fig. 3).

4.1. Limitations and directions for further research

Culture, which has been repeatedly suggested as influencing staff practice (see Bigby & Beadle-Brown, 2018), was not included as a variable because when the study commenced, there were no reliable measures appropriate for the specific context of services for people with intellectual disabilities. Since that time, such a measure has been developed (Humphreys, 2018; Humphreys, Bigby, Bould, & Iacono, under review) and we recommend it for further research of the type reported here.

Organisational level factors were not explored, despite their influence on the quality of Active Support, as suggested by Bigby, Bould, and Beadle-Brown (2019) and findings by (Bigby et al., in press). Such factors include the presence of and strategies for monitoring practice quality and recruitment practices, including position descriptions, selection criteria, and induction. Inclusion of an additional level of variables requires a four-level approach, which is beyond the scope of published sources that assist researchers analysing longitudinal data using two levels (e.g., Raudenbush & Bryk, 2002; Snijders & Bosker, 2012) or three-levels (Peugh & Heck, 2017). A four or five-level model would require a sample of organisations and states significantly larger than the eight and five respectively in the present study. Nevertheless, in order to address the potential for inferential errors arising from ignoring organisational, and in turn, state level variance, the ASM scores were group mean centred at the level of the organisation.

The longitudinal design of this study was a strength given evidence about the fragile and variable nature of the quality of Active Support over time (Bigby et al., 2019; Flynn et al., 2018; Qian et al., 2017). However, although these findings revealed the factors that predicted improvements in Active Support over time, the size of the data set and the nature of the data meant they did not answer the question about factors that predict sustained good levels. The small number of services delivering good Active Support in the earlier years of the study precluded reaching a sub-sample of such services of sufficient size to include in the analysis. The fact that organisations joined the study over time was reflective of growing positive concern about how to best support service users with intellectual disabilities to live active and socially engaged lives. Slow accumulation of data over many years may provide one strategy for achieving the sample size needed to explore the complex interaction of multiple level influences on the quality of such support experienced by individual service users, and thereby account more fully for the variance in Active Support. Another strategy proposed is use of web-based shared repositories of data from international studies. Such an approach would require agreement across research groups on measures, an aim that would seem to be increasingly achievable in light of the accumulating research on Active Support.

5. Conclusions

These findings provide compelling evidence for the significance of practice leadership and staff training to the quality of Active Support, and the presence of these two factors are strong indicators of service quality. The implication is that service providers need to ensure that all staff receive strong practice leadership and training in Active Support. The importance of these factors to the provision of quality support will need to be carefully factored into future funding schemes for users of shared supported accommodation. Furthermore, the size of services is an important consideration, and services should support no more than six people if good levels of Active Support are to be provided and sustained over time.

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Declaration of Competing Interest

The authors declare that there are no conflicts of interest.

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Quality of practice in supported accommodation services for people with intellectual disabilities: What matters at the organisational level

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ORIGINAL ARTICLE

Quality of practice in supported accommodation services for people with intellectual disabilities: What matters at the organisational level

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ABSTRACT

Background: Organisational and service level factors are identified as influencing the implementation of Active Support. The aim was to explore differences in organisational leadership and structures to identify potential relationships between these factors and the quality of Active Support in supported accommodation services.
Method: Fourteen organisations participated in this mixed methods study, which generated data from interviews with senior leaders, document reviews and observations of the quality of Active Support.
Results: Qualitative analyses revealed three conceptual categories: senior leaders in organisations where at least 71% of services delivered good Active Support prioritised practice; understood Active Support; and strongly supported practice leadership. In these organisations practice leadership was structured close to everyday service delivery, and as part of frontline management.
Conclusions: Patterns of coherent values, priorities and actions about practice demonstrated by senior leaders were associated with successful implementation of Active Support, rather than documented values in organisational policy or procedures.

Small supported accommodation services dispersed throughout communities support a better quality of life for people with intellectual disabilities than larger scale institutional or cluster type accommodation services (Mansell & Beadle-Brown, 2012). Nevertheless, the quality of life of service users across supported accommodation services (services) is variable, suggesting the model itself is necessary but not sufficient in supporting a good life for people with intellectual disabilities (Bigby, Bould, & Beadle-Brown, 2019). In a realist review of propositions about variables influencing outcomes in services, Bigby and Beadle-Brown (2018) found the strongest evidence was in respect of the severity of an individual's impairment and staff practices that reflect Active Support. Active Support is a support practice whereby staff use an enabling relationship to facilitate the engagement of people with intellectual disabilities in meaningful activities and social relationships (Mansell & Beadle-Brown, 2012). Evidence about the impact of its use on service users was explored in a systematic review of 20 papers and meta-analysis of the 14 studies reported in these undertaken by Flynn et al. (2018). These authors concluded that consistent use by staff of Active Support leads to "significant increases in the amount of time

residents spent engaged in all types of activities at home" (p. 994). Activity and relationships have been shown to be particularly important vehicles by which many aspects of quality of life are achieved (Risley, 1996; Saunders & Spradlin, 1991). Whilst Active Support is unlikely to be a panacea for ensuring all aspects of a good quality of life for people in services, it serves as an important indicator both of the quality of staff support and, thus, the likelihood of good service user outcomes.

Active Support has been widely adopted by organisations in the United Kingdom (UK) and Australia, but has proved difficult to implement and embed in services (e.g., Mansell, Beadle-Brown, & Bigby, 2013). For example, studies using similar observational methods and completion of a measure of Active Support have demonstrated its variable quality, both over time and across services, in organisations that have adopted this practice (Bigby et al., 2019; Mansell et al., 2013).

There is evidence that difficulties in successfully implementing evidence-based practices, such as Active Support, are common across the health and human services sectors, indeed, implementation science has developed as a new field of study to understand how and why implementation succeeds or fails in organisations

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(Bertram, Blase, & Fixsen, 2015). Studies of implementation draw from disciplines of education, psychology, sociology, organisational theory and management (Nilsen, 2015). Much of this work is underpinned by systems theory, which points to the influence of multiple and interacting factors at differing levels within organisations and external environments (Handy, 1993). For example, determinant frameworks propose facilitators and barriers to implementation, and although the terms and empirical nature of domains differ in the literature, Nilsen (2015) suggested five as the most commonly identified: (a) characteristics of the intervention, the staff, patients or clients; (b) organisational context, such as readiness, culture and leadership, and facilitating strategies (Nilsen, 2015). Taking a different approach, Bertram et al. (2015) proposed three primary drivers of implementation: competency, organisational, and leadership. In particular, consistent across implementation studies has been an emphasis on the significance of organisational context, such as culture, climate, structure and leadership, both at the front line and senior levels (Bäck, von Thiele Schwarz, Hasson, & Richter, 2019; Birken, Lee, & Weiner, 2012; Moullin, Ehrhart, & Aarons, 2018). Managerial leadership, for example, creates "a vision for working in accordance with evidence-based methods, role modelling, encouragement, guidance, information sharing, promotion of strong research values and alterations to quality auditing systems" (Gifford, Davies, Edwards, Griffin, & Lybanon, 2007 cited in Mosson, Hasson, Wallin, & von Thiele Schwarz, 2017, p. 545).

The models used by disability researchers proposing domains influencing service outcomes (Clement & Bigby, 2010), and many of the propositions in the five domain clusters reviewed by Bigby and Beadle-Brown (2018) resemble those found in the implementation literature and, similarly, originate in psychological or organisational theories. Nevertheless, there is a dearth of empirical evidence about what supports the implementation of or is associated with good levels of Active Support. In many respects, this reflects the limited body of research about senior leadership and the organisational context of disability service organisations. Research about implementation of Active Support has focused primarily at the level of individual service users, such as adaptive behaviour, or the service level, whereby variables, such as number of residents, characteristics and grouping; staff culture, skills, training and attitudes; and strength of front line management or practice leadership have been explored and are specific to each service. Flynn et al. (2018) found tentative evidence from a synthesis of 10 studies about experiences of implementing Active Support for the positive effect of combined classroom and in–situ staff training, services

with relatively low staff–to–service user ratios and larger services (to a maximum of six service users), and management processes, such as team meetings. Lending greater support to findings of earlier research, Bigby, Bould, Iacono, Kavangh, and Beadle-Brown (2019) and Bould, Bigby, Iacono, and Beadle-Brown (2019) recently demonstrated the positive influence of strong frontline practice leadership in services on implementation of Active Support leadership.

Organisational level characteristics are those common to all or particular types of services in an organisation, and form the context in which frontline managers and practice leaders work and staff are employed. They include operating procedures, internal managerial structures for organising or monitoring practice, job descriptions, allocation of resources at the service level for funding staff meetings, structures for delivering practice leadership, expectations about frequency and nature of supervision, and the culture or priorities of senior managers. Bigby and Beadle-Brown (2018) noted the limited research about these features and Flynn et al. (2018), in their review, found only weak evidence for the influence of organisational leadership in disability services on Active Support. In a small study, on the basis of qualitative interviews with staff, Qian, Tichá, and Stancliffe (2017) identified a lack of support from the higher levels of the organisation, and absence of policies and structures for implementing Active Support together with an overall lack of organisational readiness as barriers. These findings support the argument of Mansell and Beadle-Brown (2012), drawing on practice wisdom about the significance of commitment from senior managers to successful implementation of Active Support.

As Qian et al. (2017) suggested, there is a need to develop consistent conceptualisations of organisational features and management practices relevant to services in the disability sector in order to operationalise and measure the influence of these contextual factors on implementation of Active Support. Importantly, Qian et al. identified the influence of factors external to organisations that have been studied rarely, such as sector pay conditions, as barriers to the implementation of Active Support in the United States (US) context.

The present study draws on a subset of data from an Australian longitudinal study of Active Support that commenced in 2009. The design had some elements of an action research study, as one of the purposes was to support organisations to embed good quality Active Support through providing annual feedback on staff performance, thereby facilitating exchange of information amongst senior managers, and offering fee-for-service training. However, the study was predominantly quantitative: its size meant researchers could not engage in any

depth with each organisation in the cycles of reflection, observation, planning, and activities associated with action research, and the data collection methods were largely consistent throughout the study (McNiff, 2013). The design of the study was based on its primary purpose of understanding the individual, service and organisational level factors associated with good Active Support and, thus, the factors that organisations should concentrate on in implementing and embedding Active Support in services.

The aim of the present study was to conceptualise and categorise features of senior organisational leadership and structures for organising practice (referred to as leadership and structures) to enable further investigation of predictors of good Active Support. Research questions were: (1) What are the features of the leadership and structures in participating organisations; (2) How do features of leadership and structures differ across organisations; and (3) Are there patterns indicative of a relationship between leadership and structures and the implementation of good Active Support.

Method

Design

This was a mixed method study. Data sources were semi-structured interviews with senior organisational leaders, organisational documents, and structured observations of the support received by service users, which was used to complete a scale of the quality of Active Support. Textual data from the interviews and documents were analysed qualitatively; rating scale data were analysed quantitively. Data were collected from February 2017 to January 2018, except for data from the first of the two semi-structured interviews, which were collected when each organisation joined the study between 2009 and 2016.

Ethical approval

The study received approval from the La Trobe University Human Research Ethics Committee. Consent was obtained from all staff and service user participants. For those service users without capacity to consent about their involvement, consent was given by a person who usually made decisions for them, typically a parent or senior staff member of the service. When researchers visited services, they continually assessed the assent of service users, and were prepared to leave the service if it became clear by the behaviour of any service users that their presence was not welcome.

Participants and settings

Fourteen organisations participated in the study. They differed in size (6 had an annual turnover >$50 million, 10 managed >10 services), scope (5 provided services for groups other than people with intellectual disabilities), location (in 5 different Australian states) and time since first adopting Active Support (from 1 to 14 years). Service users with intellectual disabilities and senior leaders drawn from these 14 participating organisations were the two primary participant groups. A representative sample of 253 service users, based on socio-demographic characteristics, adaptive behaviour and additional impairments, were selected from the total sample (1112) from the 272 services managed by 14 organisations. Comparisons across selected and non-selected samples were non-significant (Mann–Whitney U and chi-square) for these attributes (Table 1). The second group of participants were 18 senior organisational leaders selected for being the most senior managers responsible for leading Active Support implementation who agreed to be interviewed. All were part of their organisation's executive group, although their titles and seniority levels varied.

Methods of data generation

Quantitative

The Active Support Measure (ASM) (Mansell, Elliott, & Beadle-Brown, 2005) was used to determine the quality of Active Support received by each service user. It has

Table 1. Comparison of the characteristics of the selected and non–selected service user samples.

		ALL ($n = 1112$)	2017–2018 sample ($n = 253$)	Non–selected sample ($n = 859$)	p
Age (years)	M	47	47	48	$p = .188$
	Range	20–84	21–81	20–84	
Percentage male		52% ($n = 578$)	54% ($n = 137$)	52% ($n = 441$)	$p = .483$
Part I ABS score	M	150	147	151	$p = .481$
	Range	22–291	22–272	22–291	
Total score on the ABC	M	28	25	29	$p = .08$
	Range	0–144	0–97	0–144	
Percentage socially impaired		60% ($n = 626$)	61% ($n = 144$)	60% ($n = 482$)	$p = .961$
Percentage with autism spectrum disorder		17% ($n = 187$)	17% ($n = 44$)	17% ($n = 143$)	$p = .804$
Percentage with a physical impairment		35% ($n = 392$)	36% ($n = 91$)	35% ($n = 301$)	$p = .823$

15 items concerning staff skill in delivering Active Support. A scale of 0 (*poor, inconsistent*) to 3 (*good, consistent*) is used to rate each item. The maximum score is 45, unless two items about challenging behaviours have not been observed (maximum = 39). Scores are converted to percentages, with 66.66 considered indicative of good Active Support (Mansell & Beadle-Brown, 2012). Four observers, including the second author, administered the ASM. Across observers, average agreement was 87% (range 69–100%, *n* = 26), and average Kappa was .73 (range 0.525–1.00). Despite low agreement for some items, paired *T*-Tests showed no significant differences for overall score agreement across observers, *t*(25) = 1.125, *p* = .271.

Qualitative

Two semi-structured interviews were conducted with one or a group of senior leaders in each organisation. The first interview was conducted when the organisation joined the study and sought leaders' views on implementing Active Support, exploring the reasons for its adoption, strategies to embed it, the organisation of practice leadership and challenges experienced. From the outset of the study, both for data collection (not reported in this paper) and discussion with organisational staff, the researchers used the five key elements set out by Beadle-Brown et al. (2014) to define practice leadership: an overall focus on the quality of life of the people supported; allocating and organising staff to provide the support people need; coaching, observing, modelling and giving feedback to shape up the quality of staff support; reviewing the quality of support with individual staff in supervision; and reviewing team performance in team meetings. During interviews, the meaning of practice leadership using this definition was clarified if there was any uncertainty. A second interview was conducted during 2017 to capture organisational changes since commencement in the study, and perspectives of leaders and nature of structures that coincided with the time that the data on the quality of Active Support reported in this paper were collected. The interview explored participants' reflections about organisational success with Active Support, further strategies used to embed it, facilitators and barriers experienced, and any changes of note in the organisation since the first interview (2–8 years previously). The qualitative data generated from the interviews were constructed through interaction between the interviewer and participants, taking the form of personal perceptions about strategies to embed Active Support, the success of the organisation and its progress with it, as well as data of a more factual nature describing structures and processes. A different type of qualitative data was the text of documents,

including the most recent annual report, position descriptions for support workers, training materials, and documents describing practice.

Procedure

For each organisation, a deidentified audit database containing the characteristics of each service and service user had been compiled when the organisation joined the study and updated annually. The representative sample of service users was selected from the database. Information and consent forms were sent to each organisation to be distributed to selected service users. For the study to proceed in any service, at least one service users' consent was required. Once received, a researcher conducted a 2-hour observation in each service, then completed the ASM for each consenting service user.

When each organisation joined the study, the senior staff member involved in the negotiation was invited to nominate a senior leader to participate in an interview. This invitation was again extended when the annual collection of quantitative data commenced in February 2017. Interviews were conducted by the first author and lasted from 45 to 90 min. They were audio recorded with permission and subsequently transcribed verbatim.

Organisations were sent a list of document types when data collection commenced in February 2017. They were invited to select the most recent of each type and send either electronic copies by email or hard copies by post to the research team.

Analysis

Quantitative

For each service user, the percentage of the maximum possible score on the ASM was calculated. The percentage of service users in each service who received good Active Support was calculated, and then the percentage of services in each organisation in which 51% or more service users received good Active Support was determined.

Qualitative

The constructed data from the senior staff interviews were analysed through an inductive interpretative analysis using grounded theory coding methods and constant comparative approach (Charmaz, 2006). This analytical approach, underpinned by symbolic interactionism (Blumer, 1969), allowed extraction of the meanings people gave to their actions and context. Exploration of these data without predefined categories allowed patterns across the whole data set to emerge (Charmaz, 2006). The first author led the analysis, initially closely reading the transcripts repeatedly and then moving through a

process of data driven open coding to identify emergent categories about senior managers' perceptions of embedding Active Support. Using an iterative process of comparing and contrasting open coding, the codes became increasingly focused as they were collapsed together into more conceptual and abstract categories until one overarching conceptual category, senior leaders focus on practice and Active Support, and four subcategories emerged.

A less interpretative content analysis approach (Hsieh & Shannon, 2005) was used to code the more factual textual interview data about the way practice leadership was structured. A similar process of open and then more focused coding was used to generate and refine subcategories, until an overarching category, organisation of practice leadership, and two subcategories emerged. Finally, similar methods of open and focused coding were used to code document data that described practice expectations of direct support workers, until a conceptual category, coherence of documented practice descriptions, and two subcategories emerged.

Next, the data were disaggregated by organisation and reviewed to identify categories and subcategories dominant or absent in each organisation. Drawing on Ragin's (1987) comparative method, this information was entered into a matrix (see Table 2). Also included in the matrix was the percentage of services (and service users) in each organisation in which the majority of service users (51%+) received good Active Support. The data matrix was visually inspected to identify any patterns between presence of subcategories and presence of good Active Support.

Trustworthiness

Issues of rigour, such as those set out by Charmaz (2006), which include credibility, originality, resonance and usefulness were addressed. The first author used memo writing to create an audit trail of emergent codes and coding decisions. A process of code refinement comprised discussion between the first and second author, who also read the transcripts, discussion about differences in interpretation, with codes initially refined to achieve consensus, then finally refined through sharing and discussion amongst all four authors. To check for resonance and usefulness, the findings were presented at forums and conferences that included experienced service providers. Illustrative quotes from participants, descriptions of structures and document contents have been used to demonstrate the grounding of the results in the data.

All identifying information was disguised to preserve individual and organisation confidentiality. A numeric identifier has been used for each organisation.

Results

Quantitative results

Quality of Active Support

Table 2 shows the results ordered by highest to lowest percentage of services in an organisation in which at least 51% of service users received good Active Support. As Table 2 shows, the range was 29–100%; for six organisations, more than two thirds of services were delivering good Active Support to the majority of service users.

Qualitative results

Figure 1 shows the three conceptual categories that captured features of leadership and structures and the subcategories associated with of each of these. They are described in detail using illustrative quotes in the sections that follow.

Senior leaders focus on practice and Active Support

This category captured perspectives of interviewees about the importance they and other leaders accorded to practice in the organisation, both in general, and in particular to Active Support. Perspectives fell into four non-exclusive subcategories: (1) shared prioritisation of practice and Active Support; (2) strongly supporting practice leadership; (3) different and competing priorities; and (4) still early stages of Active Support.

Shared prioritisation of practice and Active Support – 'practice is really, really important': Nine senior leaders shared a priority for practice and Active Support with other leaders in their organisation, all of whom recognised the significance of frontline staff practice to achieving organisational aims. They said, for example,

> We manage and develop on the basis of practice of trying to put theory or well researched stuff into action … continuing to put energy into the area of practice to maintain the quality. (1)

> … we are focused so much on our practices and the standard of our practice because without having good quality standards of practice, we don't see good client outcome, the two go hand in hand. (13)

These leaders understood Active Support as central to good practice. Their and other senior leader's commitment was demonstrated through investing resources in mechanisms to lead Active Support, profiling practice in organisational priorities, diffusing language about practice through the organisation, and continuously reflecting on progress and searching for strategies for improvement.

They recognised tensions middle managers faced in being practice focused, and the potential for diversion

by operational responsibilities. A solution was to create new senior or middle level positions, without administrative responsibilities, to lead and sustain good practice. Organisation 8, for example, had created a senior practice leadership role about, "being able to focus obviously on practice … for a far more keenly sharpened focus on person-centred Active Support." Organisation 3 had created a similar senior position, which the interviewee commented, had injected a strong set of practice skills into the organisation and had positively impacted through "support for the program manager and practice leaders." Another had created a less senior position of practice adviser to "put Active Support more on the table than it ever had been." This organisation was preparing to invest more in such positions to take account of the occupant "being spread a little bit too thin … as the number of services grows" (7).

Investment in organisation–wide positions to lead practice did not abrogate what these leaders perceived as the shared responsibility for practice amongst those in senior positions, which also meant knowing and being able to recognise good Active Support. They said for example,

> … our practice leaders and our practice managers as well as all of the leadership team and then my whole

team as a service improvement team are very well versed in Active Support. (13)

> The model of leadership is not top down. It's representing each part of the organisation … that's really important in terms of trying to affect that cultural change, and embedding the concepts [of Active Support] within the organisation. (14)

A coherent practice approach and shared language, understood and embraced by all staff, was seen as important in enabling clear messages and dialogue across the organisation. They said, for example,

> Active Support is our whole approach, not just an add on … you come here any day and you will see that … you can ask anyone in [our] organisation, "Do we do this?" They'll say, "Yes." … we don't always all the time, but people do know what it is. (7)

> … we're building that consistency … that shared language and the consistent approach … everybody's on the same page. (8)

> I wanted it to be embraced by all, from singing from one hymn sheet, not from ten varied ones. (13)

The priority accorded to practice was evident from the renaming of positions, for example, from area manager to practice manager, and the elevation of practice

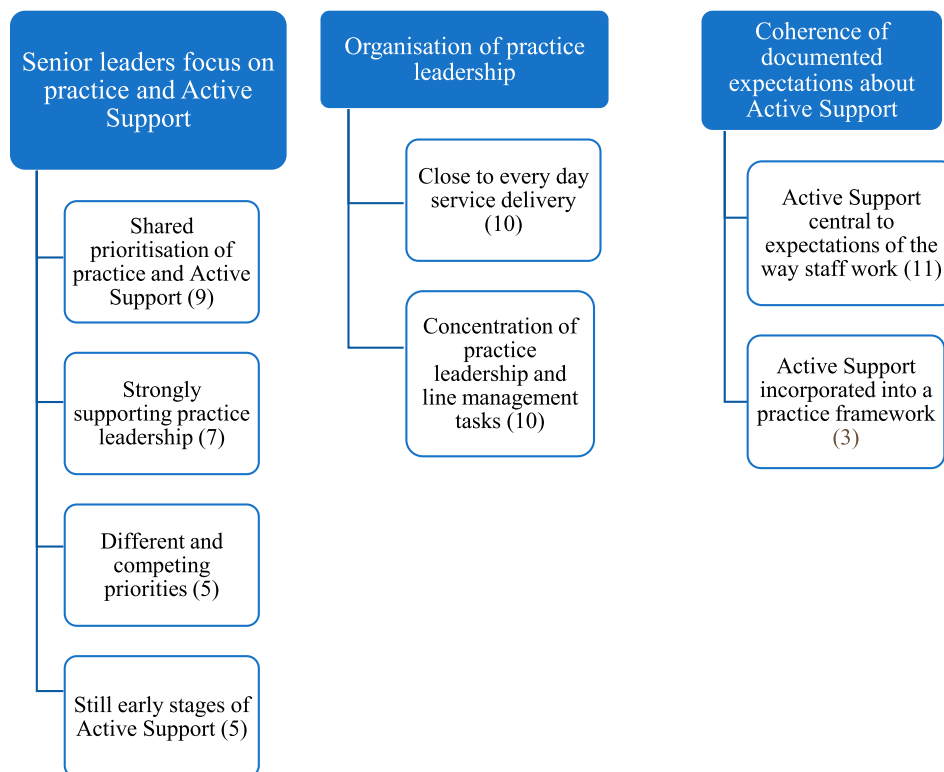Categories and subcategories and number of organisations where each subcategory is present.

Figure 1. Categories and subcategories and number of organisations where each subcategory is present.

through instigating practice quality subcommittees of boards.

Finally, these leaders were enthusiastic and strongly reflective. Rather than disheartened or complacent about Active Support progress, they maintained momentum by continuously seeking new strategies to make a difference, even if this meant exposing their limitations to researchers or other organisations,

> … even though we had been committed and said that we used Active Support … we just knew that we weren't getting traction … We didn't know what we didn't know, and participating in this research allowed us to hone in on very clear strategies to actually embed Active Support. (8)

> … we knew we were slipping and not focusing on the practice of our staff sufficiently … We don't learn by mistakes, we learn by reflecting on mistakes. (2)

Strongly supporting frontline practice leadership – "practice leadership isn't just what we'd like you to do, this is a must": Most senior leaders acknowledged the connection between strong practice leadership and good Active Support. Seven leaders talked about continuously searching for ways to strengthen practice leadership, using multiple strategies to complement structural changes they had instigated. As one senior leader said, "we have increasingly emphasised the role of practice leader" (1) and another said practice leadership "isn't just what we'd like you to do, this is a must" (13). Characteristically, strategies implemented to emphasise practice leadership tasks were reducing the administrative responsibilities by removing rostering tasks (13), appointing administrative assistants (3) and centralising administrative functions (2). Organisation 2 had experimented with different approaches to coaching staff, supplementing the practice leader role with a coaching team. Organisation 3 had used reform of staff rostering to reallocate resources, giving practice leaders extra time for observation and coaching. The manager said,

> I didn't save any money because I was able to redirect those financial resources to increasing the mentoring and observation time of practice leaders … specifically, on roster for mentoring rather than being an active worker. (3)

Organisation 7 had used revision of rosters to ensure the practice leader worked alongside every staff member at least once every fortnight. Also frequently reported were opportunities for skill development and peer support of practice leaders.

Several interviewees had encouraged operational managers to monitor the performance of practice leaders more actively. The leader of organisation 1 praised the qualities of a middle manager, saying, "[manager] has done a terrific job focusing on practice, supporting, mentoring, the practice leaders, really looking at outcomes, what's happening." Others said of middle managers,

> [practice leadership] needs to be at the top of their thoughts … making sure that's how they are supervising their staff. (8)

> … [they] need to ensure continuous improvement in their team's delivery of person centred active support. (3)

Different and competing priorities amongst senior leaders – 'I'm flying the flag a bit solo at the moment': Five leaders conveyed a sense of limited cohesion and commitment to Active Support across their organisation's leadership group, recognising their priorities about practice were not shared by other leaders. Some were trying to gain more traction about practice with other leaders and others thought this had diminished over time. They saw practice as one of the competing priorities they juggled, saying for example,

> … in our induction and our training [we might have] taken some focus off the importance of engagement and interaction … the basics of Active Support are not coming through … . (4)

> … we're working on Active Support but we've got a lot of those other fundamentals we have to get in place in order to have people with the right skills and capabilities, and people who are accountable for what they are doing and delivering what we need them to deliver. (10)

The implications of losing a previously shared commitment to practice were felt strongly by several leaders. Talking about how the focus on Active Support had stagnated one said,

> … I'm flying the flag a bit solo at the moment, to be honest, in terms of the links back to that approach [Active Support]. That really deeper, philosophical practice training has definitely been diluted … probably a heavier focus towards our compliance obligations … the language of person–centred practice and Active Support is almost evaporated from the business … . (5)

Describing the removal of a core strategy for monitoring practice as part of cost saving measures, this leader said that, despite his own commitment, he could "easily go weeks without investing any time in practice."

A very similar loss of a shared focus was described by another leader, when staffing changes meant the deep practice understanding previously held by senior managers was lost,

> [manager] is not necessarily trying to take away that focus of Active Support, not at all. I think it's just all this other stuff that's happening, which is time–consuming and stressful and that's kind of detracting from it a bit. (6)

As well as changes of personnel, the operating requirements of the National Disability Insurance Scheme (NDIS) caused some leaders think there had been a shift in priorities away from practice. For example,

> The actual impact has been really, really extreme and it just continually drags people that way, in terms of the focus of their job, just to get these back–office systems functional … just the finances, the transactional nature of the NDIS. (6)

> … the enormous amount of work transforming every part of [organisation] as we transition to the NDIS … to develop new information systems … a customer management system, our incident reporting system, our systems for recording and managing staff performance issues, our recruitment, and our service delivery and management. Attention to risk management as well … that has meant that we haven't been able to implement what we might have liked. (10)

These leaders described the momentum to embed Active Support as being swamped by other things, perceived as equally important. Both they and the organisation had taken their eye off Active Support, no longer according it the priority as previously. Senior leaders from two organisations using Active Support for many years, said, respectively,

> We've got a plan, we know where we're going … it's just the pace … I think practice leadership, having a practice framework is something that I would like to see. I don't think that where we're far enough down the track at all in that regard … we talk about Active Support … But I don't think we've set that up enough. (9)

> It [training] talks about human rights and respect and we go through the engagement and how people support people. So, lots of conversations about it … my thinking is do we need to have it more targeted towards Active Support as a role and function. (4)

As one of the comments above suggests, several leaders identified problems, particularly with the way practice leadership was organised in their services, but had yet to take action to deal with the problems,

> one of the challenges is to dedicate adequate time to that [mentoring coaching] when things are complex … it's easy to get swamped with administrative tasks and the administrative burden … the practice performance stuff it's still a challenge for us … we're trying to get to a point in looking at the structure … to make it more of a proactive sort of a role … they're probably reactive at the moment. (4)

Still early stages of Active Support 'it's just time and getting stuff in place": All leaders saw implementing Active Support as "work in progress," requiring concerted and continuing action. Five, however, felt they were just beginning, and still in the early stages of introducing

Active Support to all services, still training all staff, or still enacting structural, system or cultural changes. They said,

> It's our opportunity to engage in some really strong cultural change, and to embed that capacity for those sorts of practices, and the training that goes with the practices within our organisation. (14)

> We plan to implement it across all services, so it becomes a core part of our practice and our model … but it's a work in progress … I don't think there's anything necessarily getting in the way, it's just that the implementation and development of it across a large organisation, it's still relatively new, so we're just progressing and building the knowledge and the confidence. (11)

These leaders identified the changes they thought necessary and the time these would take,

> … [practice leaders] are more doing the troubleshooting rather than the balanced oversight of all houses. I think they're more brought in where there might be some issues … working with teams maybe around behavioural strategies or interventions … . (9)

> … we recently started the process of re–looking at the job descriptions for our team leaders, and moving out some of the administrative based functions, and the rostering functions, and bringing that back into a central pool. (14)

Importantly, *still in the early stages* was a subjective perception by leaders rather than an objective representation of the actual time since implementation. For example, despite one leader perceiving the organisation being in the early stages of implementation, it was nine years since Active Support had first been adopted.

Organisation of practice leadership

Practice leadership as defined in this study is delivered at the front line, at the service level. Elsewhere we have reported its variable quality between services within organisations (Bigby et al., 2019). However, the way that practice leadership is structured is generally similar across services within an organisation, reflecting decisions of senior leaders. Since the study began, in search of greater effectiveness and cost efficiency, some organisations had restructured the way practice leadership was organised. Some had moved away from a traditional model in which there is a supervisor in each service, who worked shifts, with administrative responsibilities and some non–contact time allocated for other practice leadership tasks (Clement & Bigby, 2010). The analysis identified more than five different ways of organising practice leadership. These differed along two key dimensions, which were captured in the following two subcategories.

Closeness of practice leadership to everyday service delivery: In 10 organisations, the position with responsibility for all or most of practice leadership tasks was close to frontline service delivery. The occupant had both regular planned and incidental contact with support staff and service users. For example, a team leader or practice leader position had responsibility for leading practice, but not necessarily all the administrative tasks in one, or, at most, two services. The rationale for this type of structure was explained by one leader who had recently restructured practice leadership across the organisation,

> We've had team leaders who have worked across three houses minimum. In some instances, there may have even been four. But we definitely realise that the optimum number is two houses, which gives that team leader the opportunity in theory to be able to get out to their locations and be more present in the houses. (8)

This contrasted to other organisations in which positions expected to fulfil most of the practice leadership tasks were positioned further from everyday practice and responsible for two or more services, in some cases as many as four.

Concentration of frontline management and practice leadership: In 10 organisations, responsibility for all five elements of practice leadership and first line management of support staff in a service were concentrated in one position. Organising practice leadership in this way was similar to the traditional model of one service – one supervisor, although in many cases the position of supervisor or practice leader managed more than one house. As one senior leader said of the recently renamed practice leader positions in his organisation,

> Their span of responsibility is primarily around the people they support and developing their teams. And that's everything from goal review and monitoring, behaviour support plans, so drafting and driving the documents and systems and culture that are behind our increasing support of the people who live in the houses. (3)

This type of structure contrasted with six other organisations in which responsibility for the tasks of practice leadership were not concentrated in one position, nor necessarily shared with first–line management of staff. Indeed, in several organisations, no one had specific responsibility for some elements of practice leadership. For example, in Organisation 11, a frontline manager was responsible for day–to–day and regular formal supervision of staff, team functioning and chairing team meetings in three or four services; another position was responsible for observing and coaching staff practice

in 8–10 services and providing feedback directly to both staff and the first–line manager.

Coherence of documented expectations about Active Support

This conceptual category represented the clarity with which expectations about staff use of Active Support were encapsulated in organisational documents. Two subcategories captured how practice expectations were described, serving as indicators of a coherent practice approach and clear messaging about Active Support: (1) Active Support central to expectations of the way staff work, and (2) Active Support incorporated into a practice framework.

Active Support central to expectations of the way staff work. Position descriptions in 11 organisations articulated an expectation that Active Support was a core to the work of support staff, by either describing core tasks of support work or naming Active Support. For example,

> … the role provides a quality service of Person Centred Active Support to achieve meaningful community inclusion, choice, personal growth and living skills to people with a disability … Provide the right amount of assistance to support clients to achieve independence in their daily living. (13)

Active Support incorporated into a practice framework: Three organisations specifically named Active Support as a central part of a practice framework in a document of that name or a staff practice manual. One organisation conceived of Active Support as the key approach needed to work with the people they supported, stating,

> The people we support and their families are at the centre of decision–making, with support tailored to meet their individual needs and goals … we have adopted Person Centred Active Support as the framework for how we assist and support people to participate and exercise greater control and choice in their daily. (6)

Organisation 13 had a much longer, carefully written document titled "Practice Framework" that described a range of person centred approaches, including Active Support that formed their framework.

The clarity of the practice frameworks in these organisations contrasted with the documentation in others, many of which did not include a practice framework. Descriptions of what they would deliver were pitched as highly abstracted values or principles.

Comparing patterns of leadership and structures with the quality of Active Support

Table 2 shows a matrix mapping the results of the qualitative analysis, in terms of the presence or absences of

subcategories, for each organisation against the quantitative data about percentage of services with good Active Support. The table has been organised according to having most to least services achieving good levels of Active Support for the majority of service users. A visual inspection of the eight subcategories revealed a key pattern: in organisations with 71% or more services with good Active Support, subcategories 1.1, 1.2, 2.1 and 2.2, were present, and, with the exception of Organisation 3, subcategory 3.2 was also present. Notably, no other organisations had all of the four subcategories (1.1, 1.2, 2.1 and 2.2) present. A weaker pattern was evident for organisations with 57% or more services with good Active Support: all had at least five subcategories present, but so did organisation 11 which only had 29% of services with good Active Support. Moreover, there was no consistent pattern to the subcategories present across these organisations. The pattern in Table 2 suggests that the combination, in an organisation, of shared prioritisation of practice and Active Support (1.1), and strong support for practice leadership by senior managers (1.2), the organisation of practice leadership close to every day service delivery (2.1), and concentrated with frontline management (2.2), are potentially associated with good Active Support in its services.

Discussion

Three conceptual features of senior leadership and organisation-wide structures and processes were identified: (1) senior leaders' focus on practice and Active Support; (2) organisation of practice leadership; and (3) coherence of documented expectations about Active Support. The features captured in eight subcategories of these three features differed across organisations. The pattern in Table 2 suggests that the combination of shared prioritisation of practice and Active Support, strong support for practice leadership by senior managers, the organisation of practice leadership close to every-day service delivery and concentration in one position with frontline management are associated with good Active Support.

Reflecting the influence of implementation science, the study focused on senior leaders and the organisational context in which Active Support is implemented. Its findings include conceptualisation of some features of leadership and contextual factors in disability service organisations, furthering the opportunity to assess or measure these in the future as proposed by Qian et al. (2017). Overall these findings reflect some of the features associated with coherence within organisations, proposed as significant to good service user quality of life, for which there is scant evidence (Bigby & Beadle-Brown, 2018). In the present study, it was coherence of

the values articulated by senior leaders, and their priorities and actions about practice that appeared to be associated with the implementation of good Active Support, rather than documented values in organisational policy or procedures. The senior leadership in nine organisations shared practice as an organisational priority, reflecting the type of commitment by senior leaders necessary for implementation of evidence-based practice found in studies of other health and human services sectors (Bertram et al., 2015). In contrast, in the other five organisations, senior leaders regarded practice as only one of many competing priorities, resembling to some extent, the absence of support by organisations for the implementation of Active Support identified by Qian et al. (2017). These qualitive data, which also suggest a change in commitment to practice by senior leaders in some organisations since the study begun, are indicative of the fragility of prioritising practice over time by senior leaders. The data may also illustrate the impact on implementation of external factors; identified by Qian et al. (2017) as labour conditions, but in this study the Australian disability reform, NDIS.

The difficulty in maintaining a shared priority about practice and Active Support is similar (and perhaps reflective of) the fragility of the quality of Active Support in organisations, and difficulties in maintaining a high proportion of staff trained in this practice (Bigby et al., 2019; Qian, Larson, Tichá, Stancliffe, & Pettingell, 2019). These findings demonstrate the significance of ensuring organisational leaders understand and prioritise practice rather than allocating responsibility for practice quality to one senior position or division. They raise warning flags for senior leaders about the ease with which they, and their organisation can be diverted from ends to means: that is, from the core business of delivering quality support to concentrating on administrative structures and processes, and reporting mechanisms assumed necessary for doing so. These findings resonate with the early results from a study of culture in support services for people with complex needs in Norway (Tøssebro, 2018), where a new focus on managerialism shifted attention of supervisory staff from practice to paperwork designed to make them accountable for practice.

The subcategory *still in the early stages* presents a conundrum. Relying on subjective perceptions of interviewees and unrelated to the actual time since implementation of Active Support, this subcategory was present in organisations that had been implementing Active Support for 1–5 years and absent in others implementing it for similar periods. Differing organisational size, complexity or geographic spread, or turnover of senior staff and loss of corporate memory about practice initiatives may be explanations. Nevertheless, the

Table 2. Matrix of categories and subcategories about organisational leadership and structures and percentage of services with good Active Support by organisation.

Organisation	Percentage of services (and SU's) with majority of service users receiving good Active Support	1 Senior leaders' focus on practice and Active Support				2 Organisation of practice leadership		3. Coherence of documented expectations about Active Support	
		1.1 Shared prioritisation of practice and Active Support	1.2 Strongly supporting practice leadership	1.3 Different and competing priorities	1.4 Still early stages Active Support	2.1 Close to everyday service delivery	2.2 Concentration of practice leadership and line management tasks	3.1 Active Support incorporated into a practice framework	3.2 Active Support central to expectations of the way staff work
3	100% (93%)	1	1	0	0	1	1	0	0
1	100% (92%)	1	1	0	0	1	1	0	1
8	86% (88%)	1	1	0	0	1	1	0	1
13	83% (70%)	1	1	0	0	1	1	1	1
7	71% (71%)	1	1	0	0	1	1	0	1
2	71% (62%)	1	1	0	0	1	1	1	1
6	57% (48%)	0	1	1	0	1	0	1	1
12	57% (42%)	0	0	1	1	1	1	0	1
14	50% (62%)	1	0	0	1	0	0	0	1
9	50% (55%)	1	0	0	1	0	0	1	1
5	40% (41%)	0	0	1	0	0	1	0	0
4	33% (35%)	0	0	1	0	0	0	0	1
10	33% (31%)	0	0	1	1	1	1	0	0
11	29% (21%)	1	0	0	1	1	1	0	1

absence of this subcategory in any of the organisations with more than 71% of services with good Active Support lends some support to a previous finding of a positive association between time since implementation and Active Support quality (Bigby et al., 2019; Bould et al., 2019). However, it may be that time necessary to implement Active Support is influenced by organisational size and scope, or stability of senior leaders, and, hence, be a poor single indicator.

The findings reflect the potential significance of organisational structures to implementation identified in the literature. They also contribute to understanding more specifically the type of structures needed to deliver strong practice leadership at the service level, which Bigby et al. (2019) and Bould et al. (2019) had identified as promoting good Active Support. The beneficial effects of structuring the tasks of practice leadership close to frontline service delivery and concentrating these tasks in one position were alluded to by interviewees and are found in the practice literature (Ashman, Ockenden, Beadle-Brown, & Mansell, 2010). There are, for example, more likely to be opportunities to know the service users in a service well and for informal modelling, coaching and observation sessions to occur if practice leaders spend more time in the services. Knowing service users also helps practice leaders to gain credibility with staff, whilst concentrating practice leadership tasks with frontline management is likely to facilitate more regular feedback and authoritative supervision to staff about all aspects of their practice. This finding, alongside those of Bigby et al. (2019) and Bould et al. (2019) about the

influence at the service level of strong practice leadership on quality of Active Support, strengthens the case for attention by organisations to all aspects of practice leadership.

A further aspect of organisational context was reflected in the category *coherence of documented expectations about Active Support*, derived from analysis of paperwork. Although expectations about using Active Support were present in the support worker job descriptions of most organisations, only a few had either a coherent practice framework or one that incorporated Active Support. The relative absence of this type of documentation suggests support workers may face multiple expectations of their practice, without the means to integrate or prioritise them. However, the pattern in these data about potential factors associated with good Active Support does not support propositions about the importance of coherent paperwork and documenting expectations (Bigby & Beadle-Brown, 2018). The apparent insignificance of paperwork to Active Support practice may not be surprising in light of the studies by Quilliam, Bigby, and Douglas (2018) that showed staff seldom read high level organisational documents, manage paperwork to reflect their own practice wisdom and priorities, and, at times, complete paperwork by describing what should have happened rather than what did.

Conclusion

Mansell, Beadle-Brown, Whelton, Beckett, and Hutchinson (2008) suggested that organisational features

affecting implementation of Active Support are likely to work in combination, and, hence, are best explored through statistical modelling. Qian et al. (2017) pointed out that these features first require conceptualisation and measurement. A strength of this mixed methods study was the identification of organisational features derived from the qualitative data and combinations of these that are potentially associated with implementation of good Active Support. These organisational features and potential associations found in this study provide the basis for measurement of organisational leadership and structures. In this way, a limitation of this and other studies in failing to quantify organisational features emerging as potentially relevant to implementation of good Active Support could be addressed. A direction for future research, therefore, is to transform the qualitative into quantitative data for use in a multilevel model of factors predicting the quality of Active Support. Such a model could test statistically the influence of items 1.1, 1.2, 2.1 and 2.2 singly or in combination on quality of Active Support. Also important is further exploration of organisational culture, leadership characteristics or other factors that support and sustain a focus on practice by senior leaders, using qualitative case study or action research methods. Further research about effective ways of organising practice leadership is also warranted given the diversity identified in this study. This issue is particularly pertinent at a time in Australia and elsewhere when changes to funding formulae and recognition of the administrative burden on frontline managers (Clement & Bigby, 2010) are being recognised.

The purpose of the present study was to provide further insights into organisational factors that require specific attention and resources by disability service organisations and funders in order to achieve good quality Active Support. The patterns identified point to the importance of what might be constructed as a strong culture of support for practice amongst senior leaders of an organisation, combined with structuring practice leadership so that it is close to frontline service delivery and tasks are concentrated and aligned with those of line management. Indeed, coherence of values and actions that prioritise practice appear to be more important than carefully crafted organisational policies and procedures, which are often the focus of quality assurance processes, auditors, funders and regulators. These findings provide pointers for organisations as they redesign delivery of practice leadership to take account of organisational size and externally imposed funding imperatives. They also point to implications for the Australian NDIS in developing appropriate funding levels to support the type of structures and strength of both organisational and frontline practice leadership skills

necessary to implement good Active Support practice and, thus, good quality of life for service users.

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Predicting good Active Support for people with intellectual disabilities in supported accommodation services: Key messages for providers, consumers and regulators

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Predicting good Active Support for people with intellectual disabilities in supported accommodation services: Key messages for providers, consumers and regulators

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ABSTRACT

Background: There is strong evidence about the effectiveness of Active Support. Recent research has established predictors of good Active Support as staff training, practice leadership, and service setting size. This paper explores features of organisational leadership and structures predictive of Active Support.

Methods: Multilevel modelling with data from surveys, observations and interviews was used to identify predictors of Active Support at the levels of service users ($n = 253$), services ($n = 71$) and organisations ($n = 14$).

Results: Good Active Support was predicted by: (1) positive staff perceptions of management, (2) prioritisation of practice and Active Support by senior managers, (3) strong management support for practice leadership, (4) organisation of practice leadership close to everyday service delivery, and (5) concentration of practice leadership with frontline management.

Conclusion: These findings extend understanding of predictors of Active Support and provide indicators of service quality, with important implications for service providers, service users and those monitoring the quality of services.

Australia is experiencing a unique period of disability service reform. Unlike the United Kingdom (UK) and other European countries, since 2013, there have been an unprecedented expansion of funding to support the social and economic participation of an estimated 480,000 people with severe disabilities (Miller & Hayward, 2017). The Australian National Disability Insurance Scheme (NDIS) provides individual funding for "reasonable and necessary" disability supports to eligible participants, as well as grant funding for capacity building initiatives (NDIS, 2013, Section 34). While it aligns closely with neo-liberal welfare state reforms characterised by marketisation and individualised funding, the NDIS goes much further than other schemes (Carey, Malbon, Olney, & Reeders, 2018). Unlike the UK, there is no centralised or local planning or commissioning of services; this function rests with the market and decisions of each individual through expenditure of funds within parameters of their plan. Unlike the Scandinavian countries, where small subgroups of people receive individualised funding, there is no opt in: individualised funding applies to all eligible participants across

all States and Territories in Australia and there is no block funding of disability services.

People with intellectual disabilities face considerable challenges exercising the consumer power that underpins individualised funding systems, such as the NDIS (Churchill, Sotiri, & Rowe, 2017; O'Connor, 2014). One of these challenges is service choice, especially given the significant variability in quality across supported accommodation services (Bigby, Bould, & Beadle-Brown, 2019). Evidence-based indicators of service quality are one means of better equipping people with intellectual disabilities, their families or advocates to navigate service marketplaces.

Service quality indicators are also central for organisations responsible for regulating marketised service systems, such as the NDIS Quality and Safeguard Commission (Commonwealth of Australia, 2018) and UK Care Quality Commission (Key Lines of Enquiry u.d). However, quality indicators used by organisations such as these are often high level and generic, rather than tailored to reflect evidence relevant to particular groups of service users or types of service. People with

intellectual disabilities are the largest group of adult participants in the NDIS, making up the majority of approximately 17,000 people with disabilities in supported accommodation services in Australia (NDIS, 2019). If service quality indicators are to be of value to this group, abstract concepts, such as person-centred practice, found in the NDIS Commission's quality indicators, need to be translated into evidence-based behavioural expectations of good practice in supported accommodation services and descriptions of the organisational priorities, structures and processes necessary to deliver good practice.

Consistent use of Person-Centred Active Support (Active Support) is the most well-researched predictor of quality in supported accommodation services for people with intellectual disabilities (Bigby & Beadle-Brown, 2018). Active Support is a practice whereby staff use an enabling relationship to facilitate the engagement of people with intellectual disabilities in meaningful activities and social relationships (Mansell & Beadle-Brown, 2012). Based on theories of behaviour and communication, consistent use of Active Support significantly increases service user engagement, choice and control (Flynn et al., 2018). Active Support dovetails with the coherent, enabling, motivating and respectful cultures found in high performing services (Bigby & Beadle-Brown, 2016). Active Support also complements Positive Behaviour Support (PBS), providing the foundation for proactive strategies through targeting support that increases engagement and reduces reliance on challenging behaviour to gain choice and control (Ockenden, Ashman, & Beadle-Brown, 2014). Clear behavioural indicators of good Active Support practice are incorporated into research tools (Mansell, Elliott, & Beadle-Brown, 2005) and training materials (see e.g., Murphy, Bradshaw, & Beadle-Brown, 2017; Every Moment Has Potential).

Though widely adopted by disability services in Australia, Active Support has been difficult to embed in services (Flynn et al., 2018; Mansell & Beadle-Brown, 2012). Researchers have sought to identify predictors of good Active Support at the organisational, service and individual levels both to inform service design and provide indicators of service quality to support the exercise of choice by consumers and the work of service regulators. Flynn et al. (2018), in a review of 10 studies, found the strongest evidence about predictors of Active Support was in respect to training (classroom combined with in-situ methods), relatively low staff-to-service user ratios and larger services (maximum of six service users), and management processes, such as team meetings. More recently, a large Australian study that applied multi-level modelling found predictors of good Active Support were the individuals' adaptive behaviour, strength of

frontline practice leadership, staff training in Active Support, and time since Active Support was implemented (Bigby, Bould, Iacono, Kavangh, & Beadle-Brown, 2019a). Similar predictors were found in a study of increases in the quality of Active Support over time, which included repeated measures from the same 51 services in eight organisations over periods of two to seven years (Bould, Bigby, Iacono, & Beadle-Brown, 2019). Predictors of Active Support in these studies were predominantly characteristics at the level of the individual or service rather than organisation. Despite propositions about the importance of organisational level factors, such as commitment from senior managers, organisational readiness, and relevant policies and structures (Qian, Tichá, & Stancliffe, 2017; Mansell & Beadle-Brown, 2012), there is a dearth of evidence about them (Bigby & Beadle-Brown, 2018; Flynn et al., 2018). Qian et al. (2017) suggested one of the reasons for such limited evidence at this level was that organisational factors relevant to services in the disability sector had not been sufficiently well conceptualised or operationalised to enable measurement.

A qualitative analysis of interviews with senior leaders from 14 Australian disability organisations, which had adopted Active Support, identified four features of organisational management and structures (management features) that were common to the six of these organisations that delivered good Active Support to the majority of service user in 71% or more of their services (Bigby, Bould, Iacono, & Beadle-Brown, 2019b). These features were senior leaders who shared prioritisation of practice and

Table 1. Organisational management features.

Organisational management feature	Description
Shared prioritization of practice and active support	Senior leaders share a commitment to practice and active support, recognise significance of conceptual clarity about practice, demonstrate investment of resources to leadership of practice across services, symbolic use of language of practice and continuous reflection on progress.
Strongly supporting practice leadership	Senior leaders are concerned with strengthening and adjusting delivery of frontline practice leadership through structure, support and development to staff, and redistribution of tasks and resources.
Closeness of practice leadership to every-day service delivery	Frontline practice leadership functions reside with staff who are close to the everyday management and running of the service. They work alongside staff and have both formal and incidental opportunities for observation, modelling and coaching.
Concentration of practice leadership tasks	Frontline practice leadership functions are concentrated in one position rather than dispersed across positions.

Active Support and strongly supported practice leadership, and practice leadership organised close to every-day service delivery and concentrated in one position with frontline management. Table 1 provides definitions for each of these features. Bigby et al. (2019b) suggested the potential to statistically test whether the presence of these four features, along with other variables, were predictive of good Active Support, singly or in combination. Accordingly, the aim of the present study was to further explore predictors of good Active Support by including, in a multi-level model (MLM), results reported by Bigby et al. (2019b) about the presence or absence of the four organisational management features in 14 organisations, together with other individual and service level data for these organisations,

Method

Design

This study was a cross-sectional design. Data were collected over the period of February 2017 to January 2018 from a cohort of services provided by 14 organisations. These data were in the form of surveys completed by staff about their own characteristics and work experiences, surveys completed by staff about service user characteristics, observations of service users, staff practice and practice leadership and interviews with practice leaders. Also included were the data on the organisational management features of each of these organisations reported by Bigby et al. (2019b).

Ethical considerations

The study received ethical approval from the La Trobe University Human Research Ethics Committee (HREC). Consent was obtained directly from staff and service users, or their proxy for those without capacity for consent, as approved by the HREC.

Participants and settings

As Table 2 shows, the number of services managed by each organisation varied from 5 to 34, the time since they first adopted Active Support varied from 1 to 15 years, and six had an annual turnover above $50 million. The 14 organisations managed a total of 272 services, supporting a total of 1112 service users. Table 3 shows the total number of services, service users and staff who participated from each organisation. The sample of 253 service users from 71 services were selected for representativeness on the basis of service user age, gender, adaptive behaviour, challenging behaviour, social

Table 2. Key characteristics of the 14 participating organisations

Organisation	Total number of services managed	Total number of service users	Number of years implementing active support	Annual turnover split into 2 groups
1	5	21	8	<50 million
2	15	28	14	>$50 million
3	5	18	13	>$50 million
4	34	155	12	>$50 million
5	25	100	6	<$50 million
6	7	29	5	>$50 million
7	10	62	5.5	<$50 million
8	33	138	11	<$50 million
9	27	140	2	>$50 million
10	38	131	9	>$50 million
11	23	66	2	<$50 million
12	7	42	1	<$50 million
13	16	78	1	<$50 million
14	31	142	1	>$50 million

impairment, physical disability and presence of autism. Comparisons between the selected and non-selected samples were conducted using Mann–Whitney U and chi-square. As Table 4 shows, there were no significant differences on any of these attributes ($p < .01$ level).

Measure of the predicted variable – quality of active support

The quality of Active Support was determined using the Active Support Measure (ASM) (Mansell et al., 2005). This measure has been reported to have acceptable

Table 3. Number of services, consenting service users (SUs), staff surveys and practice leadership interviews from each organisation included in the analysis.

Organisation	Total number of services	Total number of service users	Total number of staff	Total number of practice leaders
1	5	13	18	4
2	6	12	20	6
3	5	14	17	4
4	4	17	13	4
5	5	16	15	5
6	7	25	25	7
7	7	35	25	7
8	6	21	36	6
9	5	19	18	5
10	3	13	11	3
11	5	11	15	5
12	5	28	20	5
13	4	17	12	4
14	4	12	18	4

Table 4. Comparison of the characteristics of the selected and non-selected service user samples.

		ALL ($n = 1112$)	2017–2018 sample ($n = 253$)	Non-selected sample ($n = 859$)	p
Age (years)	M	47	47	48	$p = .188$
	Range	20–84	21–81	20–84	
Percentage male		52% ($n = 578$)	54% ($n = 137$)	52% ($n = 441$)	$p = .483$
Part I ABS score	M	150	147	151	$p = .481$
	Range	22–291	22–272	22–291	
Total score on the ABC	M	28	25	29	$p = .08$
	Range	0–144	0–97	0–144	
Percentage socially impaired		60% ($n = 626$)	61% ($n = 144$)	60% ($n = 482$)	$p = .961$
Percentage with autism spectrum disorder		17% ($n = 187$)	17% ($n = 44$)	17% ($n = 143$)	$p = .804$
Percentage with a physical impairment		35% ($n = 392$)	36% ($n = 91$)	35% ($n = 301$)	$p = .823$

reliability and validity, and in most studies a Cronbach Alpha over 0.9 has been reported (see e.g., Beadle-Brown, Hutchinson, & Whelton, 2012; Mansell, Beadle-Brown, Macdonald, & Ashman, 2003). The ASM is completed for each consenting service user after 2-hours of observation, conducted between the hours of 4:00 and 6:00 pm. Each of 15 items addresses the quality of staff support to individual service users to enable them to be engaged in meaningful activities and relationships. The measure is completed according to guidelines provided by Mansell et al. (2005), with each item rated according to a scale anchored by 0 (*poor, inconsistent support*) and 3 (*good, consistent support*) to yield a maximum score of 45. If challenging behaviour has not been observed, it is scored as "not applicable," resulting in the omission of two items and a maximum possible score of 39. Scores are then converted to a percentage, with a score over 66.66% designated as the threshold score indicative of a good level of Active Support (Mansell & Beadle-Brown, 2012).

Four observers were trained in the ASM by the second author using video material, then the ASM was completed at least twice alongside the second author in a service before collecting data alone. An average of 87% (range 69%–100%, $n = 26$) agreement and kappa of .73 (range .53–.100) were obtained across observers. In light of the low agreement for some ASM items, paired t-tests were performed for overall scores obtained across observers, which indicated that any differences did not reach significance ($p = .271$).

Measures of the predictor variables

Predictor variables included service user level factors (service user characteristics – gender, age, adaptive behaviour, aberrant behaviour and social impairment), 10 service level factors (staff-to-resident ratio, staff training, satisfaction, role clarity, perception of practice leadership, perception of quality of management, attitudes towards people with intellectual disabilities, observed measure of practice leadership, number of residents and their heterogeneity) and eight organisation level factors (presence or absence of the four organisational management features from Bigby et al. (2019b) (see Table 1); number of services managed, total number of service users, time since adoption of Active Support, and annual revenue turnover).

Service user characteristics questionnaire. Data about each service user were obtained from a staff-completed questionnaire. Items related to gender, date of birth, and other disabilities present. The questionnaire incorporated the Adaptive Behavior Scale (SABS) Part 1 (Hatton et al., 2001), the Aberrant Behavior Checklist (ABC) (Aman, Burrow, & Wolford, 1995) and the Quality of Social Impairment question from the Schedule of Handicaps Behaviours and Skills (HBS) (Wing & Gould, 1978). Authors of these measures have reported them to have acceptable reliability and validity.

Staff-to-resident ratio. A proforma completed by the observer (at the time of the ASM) was used to record the numbers of residents present and staff on duty during the 2-hour observation. The staff-to-resident ratio, a service level factor, was determined by dividing the number of staff by the number of residents.

Staff experiences and satisfaction survey. Staff in each service completed an adapted version of the Staff Experiences and Satisfaction Questionnaire (SESQ) (Beadle-Brown, Gifford, & Mansell, 2005). It includes three sections: (1) demographics and training; (2) experiences at work – satisfaction, role clarity and conflict, and perception of practice leadership and quality of management; and (3) a shortened 13-item version of the original Section D scale looking at attitudes towards people with intellectual disabilities. All scales along with their reliability and validity are described in detail in Mansell, Beadle-Brown, Whelton, Beckett, and Hutchinson (2008, pp. 401–402). Based on a large-scale evaluation involving 550 staff, the 13-item attitude scale was shown to have a Cronbach's alpha of 0.856 (Mansell et al., 2008)

The Observed Measure of Practice Leadership. The quality of practice leadership in the service was measured using the Observed Measure of Practice Leadership (Beadle-Brown, Bigby, & Bould, 2015). Across several studies, this has been shown to be a valid and reliable measure, with good internal consistency

(Cronbach Alpha over 0.9), acceptable inter-rater reliability (Kappa value over 0.6 on average across the five domains) and good construct validity in terms of discriminatory power for the predictor variable (the ASM) – better practice leadership was consistently associated with higher levels of active support (t (171) = 3.88, $p < 0.001$; in Beadle-Brown et al., 2015). An observer made an additional visit to the service, or one of the services supervised by a practice leader, for a 10–30 min observation, followed by an interview with the practice leader (approximately 1 h) and review of the paperwork associated with practice leadership, such as staff work allocation and team meeting minutes. The observer used these data to score five core aspects of practice leadership: (1) overall focus on service users' quality of life (QoL); (2) allocating and organising staff to provide the support needed by service users to maximise their quality of life; (3) coaching, observing, modelling and giving feedback to staff about the quality of their support; (4) reviewing performance with individual staff during supervision; and (5) reviewing team performance in team meetings. Rating of each element was based on a 5-point scale, anchored by 1 (*no or almost no evidence of the element being in place*) and 5 (*element was consistently in place*). Scores were tallied across elements and divided by 5 to yield a mean score indicative of the overall strength of practice leadership provided by the service's frontline manager.

Organisational management features. The data from findings reported by Bigby et al. (2019b) on the presence or absence of four organisational management features which are reproduced in Table 5 were used. Based on the presence (score of 1) or absence (score of 0) of each feature in each organisation, an organisational total score was calculated to yield a maximum score of 4 across the four items: (1) shared prioritisation of practice and Active Support by senior leaders (2) senior leaders

strongly supporting practice leadership, (3) organisation of practice leadership close to every-day service delivery, and (4) concentration of practice leadership and front-line management tasks.

Organisational size, turnover and time since adopting Active Support. Data were collected from each organisation on the number of services managed, total service users supported, time since adoption of Active Support, and annual turnover.

Procedure

An audit questionnaire was completed within each service for all service users for the purposes of selecting a sample, and ascertaining the total number of services managed and service users supported by each organisation. The audit questionnaire was combined with the service user characteristics questionnaire into one package. For each organisation, an audit database was created and sent to a contact person, with instructions to (1) complete the coding of service users identified within the database; (2) distribute questionnaires for all service users in the organisation, with requests for a staff member who knew the individual well to complete and return to the contact person; (3) remove the service user name on each questionnaire and leave only a unique code from the database; and (4) return completed audit questionnaires to the research team in the pre-paid envelopes provided. Participation in the study was dependant on completion of this audit for all service users with intellectual disability.

Once staff consent was gained, staff questionnaires were mailed to supervisory and managerial staff associated with each service, who were asked to give a copy to each consenting member of staff. Completed staff questionnaires were returned directly to the researchers by mail using a pre-paid envelope.

Table 5. Organisational management features across the 14 organisations (adapted from Bigby et al., 2019b).

Organisation	Services (SUs) receiving good active support[1]	Shared prioritisation of practice and active support	Strongly supporting practice leadership	Practice leadership close to everyday service delivery	Concentration of practice leadership and line management tasks
1	100% (92%)	1	1	1	1
2	71% (62%)	1	1	1	1
3	100% (93%)	1	1	1	1
4	33% (35%)	0	0	0	0
5	40% (41%)	0	0	0	1
6	57% (48%)	0	1	1	0
7	71% (71%)	1	1	1	1
8	86% (88%)	1	1	1	1
9	50% (55%)	1	0	0	0
10	33% (31%)	0	0	1	1
11	29% (21%)	1	0	1	1
12	57% (42%)	0	0	1	1
13	83% (70%)	1	1	1	1
14	50% (62%)	1	0	0	0

Note: [1]Organisations with 71% or more services with the majority of service users (>61%) shared four these organisational management features.

An observer then visited each service to conduct the 2-hour observation and complete the ASM for each consenting service user. On another day, an observer visited the service to complete the Observed Measure of Practice Leadership. Hence, two visits were made to each service, within 2–4 months, except for services that shared a practice leader, in which case only one visit was made across these services for the observed measure of practice leadership.

Analysis

Data were entered into IBM SPSS 24. The criterion for inclusion of data in the analysis was a minimum of three staff questionnaires returned for a service. Descriptive statistics and correlational analyses were conducted to examine relationships among predictors, with Cohen's (1988) guidelines applied for effect sizes.

For the purpose of the MLM, data were organised across service user, service, and organisation levels. Service user level scores were the ASM percentage score, and the full-scale score for Part 1 of the Adaptive Behaviour Scale (ABS) was estimated from the SABS using the method described by Hatton et al. (2001). Service users were initially categorised into two groups: below 151 and 151 and above, a cut off used in other studies to indicate service users with more or less severe disability (see Mansell, Beadle-Brown, & Bigby, 2013). However, preliminary analysis indicated that all people supported by one organisation had an ABS of 80 or less, therefore the ability grouping was revised to include ABS scores of less than 80, 81–150 or 151 and above. These ABS groups were aggregated to the service level to represent the number of ABS groups supported by a service: for example, in a service with four service users, the number of ABS groups was two if three service users were in the less than 80 ABS category and one service user was in the 81–150 category. Other service level scores were the Observed Measure of Practice Leadership mean for each frontline manager and staff-to-resident ratios during the 2-hour observation. The unique codes provided from organisations using the audit database were used to ascertain the total number of service users in each service, which were grouped into two categories: 1–6 and 7+, a cut off based on studies by Tøssebro (1995) and Flynn et al. (2018). The aggregated data for size of setting, ability group, and practice leadership score were assigned to all the individual service users within the same service(s).

For the staff questionnaires, data were included in the analysis only if at least three staff surveys were returned for a service. Individual staff data on attitudes towards people with intellectual disabilities, perception of practice leadership, quality of senior management, role clarity and conflict, job satisfaction, and training in Active Support were aggregated to the service level through a mean score for each service, and subsequently assigned to all the individual service users within the same service.

Finally, the unique codes provided from organisations using the audit database were used to ascertain the total number of services and service users supported by the organisation. The annual turnover was grouped into greater (>) or less than (<) $50 million, and these data, along with the total score for presence of the four organisational management features taken from Bigby et al. (2019b), and number of years implementing Active Support were aggregated at the organisational level. These scores were subsequently assigned to all individual service users within the same organisation. Due to missing data, 16 services and 54 service users were excluded from the final analysis. The data structure for the MLM, which took into account the clustering, was 253 individual service users (level 1) nested within 71 supported accommodation services (level 2) from 14 organisations (level 3). The MLwiN program (Version 3.02; Charlton, Rasbash, Browne, Healy, & Cameron, 2017) was used for the MLM analysis. The Deviance Information Criterion (DIC) (Spiegelhalter, Best, Garlin, & van der Linde, 2002) statistics for model comparison was calculated using the Markov chain Monte Carlo (MCMC) (Browne, 2017) estimation, given the size and structure of the data set that required partitioning of the variance at three levels (Rodriguez, 2007). Any decrease in the goodness of fit diagnostic, DIC, suggests a better model. All models were estimated using non-informative priors (Browne, 2004) with a burn-on of 1000 and 20,000 iterations.

An initial null model was estimated, which also computed an intraclass correlation coefficient (ICC): that is, the proportion of the total residual variance attributable to differences between groups, referred to as the variance partition coefficient (VPC) (Goldstein, 2003). The formula for calculating the VPC is the ratio of the variance at each level to the total variance. Subsequently, a series of multi-level models were built using a bottom up approach (Hox, 2010; Raudenbush & Bryk, 2002). The fully adjusted model was:

$$\text{ASM Score}_{ijk} = \beta_{ijk} + \text{ABS}_{ijk} + \text{PLMean}_{ijk}$$
$$+ \text{7ormoreSUs}_{ijk}$$
$$+ \text{Staff perception of management}_{ijk}$$
$$+ \text{Organisational management features}_{ijk}$$
$$+ e_{ijk}$$

In this model, i refers to the service user, j the supported accommodation service, and k the organisation.

β_{ijk} refers to the grand mean (i.e., average Active Support score of the 253 service users from 71 services from the 14 organisations) and e_{ijk} refers to a random effect.

Results were deemed significant if the estimates were more than twice their estimated empirical standard error. All predictors were grand mean centred (i.e., the intercept was centred around the mean of the sample) to facilitate the interpretation of the intercepts and slopes, and because of primary interest was the influence at the higher levels of service and organisation factors (Enders & Tofighi, 2007).

Results

Table 4 provides descriptive statistics for the service users ($n = 253$). Inspection of this table shows that they varied in terms of their characteristics and support needs. On average, the sample was relatively able compared to participant samples in other studies of Active Support (Mansell et al., 2013).

Table 6 provides the spearman correlations (at the service user level) used to examine relationships among predictors included in the final model. The largest correlation with the ASM was the level of adaptive behaviour ($\rho = .432$, $n = 253$, $p < .001$), with a medium effect size (Cohen, 1988). Small to medium correlations were found between the organisational management features, determined by tallying across the number of features present for each organisation (Table 5, with a total possible score of 4) and each of the ASM, ABS, mean practice leadership and the service size (Table 6).

Other service user level data, such as socio-demographic or degree of social impairment, were not significantly correlated with the ASM. Other factors not found to correlate significantly with the ASM were service level data, including the number and heterogeneity of service users, staff-service user ratios, staff qualifications and attitudes, and organisational level data about characteristics, such as size, turnover and years implementing Active Support. Hence, these factors were not found to be predictors in the model.

Table 7 presents the modelling results as parameter (beta) coefficients and their standard errors, along with

the model-fitted diagnostic DIC. Model 1 is the null, which includes no predictor variables, and the VPC indicated 8% of the variance in the ASM scores were accounted for by differences between organisations, 60% by differences between the supported accommodation services, and 32% by within individual service user differences. In Model 2, individual predictors were included, and only one predictor (ABS) was significant, indicating that individuals with greater adaptive behaviour received better quality of support as measured on the ASM. No other service user measures contributed to the model. Model 3 included variables associated with the service; services with higher practice leadership scores and a more positive perception of management by staff were associated with higher ASM scores. Conversely, services with 7+ service users were associated with lower ASM scores. No other service level variables contributed to the model. Model 4 allowed for examination of variables associated with the organisation. Inclusion of the score on organisational management features led to a further improvement in the model-fitted diagnostic DIC. No other organisation level variable contributed to the model.

Although there remained significant variance at each of the three levels, as indicated in Figure 1, the predictors included in Model 4 accounted for 88% of the between organisation variance, 64% of the between service variance, and 19% of the within individual service user variance.

Discussion

Extending findings from an earlier study, the present study demonstrated statistically, that combined, the four organisational management features identified by Bigby et al. (2019b) were predictors of the quality of Active Support. These features were senior leaders' shared prioritisation of practice and Active Support, strong support for practice leadership by senior leaders, the organisation of practice leadership close to every-day service delivery and concentrated in one position with frontline management (Figure 1). For this study, the presence or absence of each of these features in an organisation was derived from interviews with senior

Table 6. Spearman correlations between predictor variables.

	ABS	Mean Practice Leadership	Service size – total number of SUs	Staff perception of quality of management	Organisation score on management features present
ASM	.432[b]	.295[b]	−.255[b]	0.061	.381[b]
ABS		−0.117	.250[b]	.170[b]	.180[b]
Mean Practice Leadership			−0.051	−0.080	.322[b]
Service size – Total number of SUs				.147[a]	.130[a]
Staff perception of quality of management					0.009

Notes: [a]Correlation is significant at the 0.05 level (2-tailed).
[b]Correlation is significant at the 0.01 level (2-tailed).

Table 7. Parameter (beta) estimates of the multi-level models and deviance information criterion (MCMC).

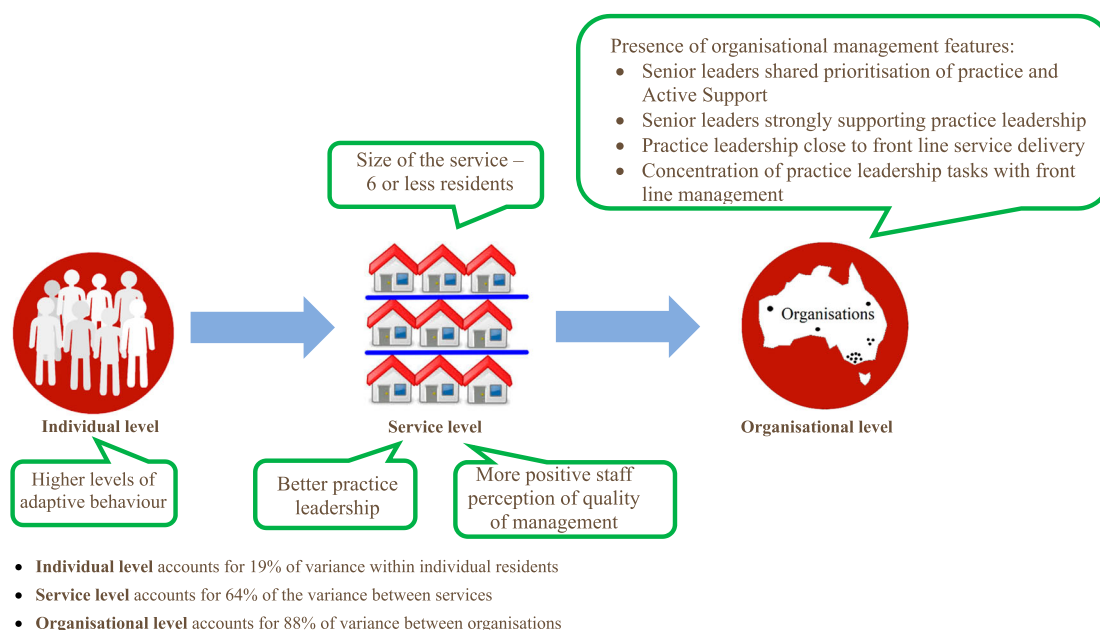|	Model 1 (S.E)	Model 2 (S.E)	Model 3 (S.E)	Model 4 (S.E)
Fixed parameters				
Constant	67.488 (2.496)	67.458 (2.157)	69.948 (1.765)	69.436 (1.511)
Individual predictors				
ABS		0.134 (0.017)	0.154 (0.017)	0.146 (0.017)
Service level predictors				
Mean practice leadership score			7.820 (1.846)	6.793 (1.714)
7 or more SUs in the service (6 or less base)			−28.673 (7.112)	−29.586 (6.587)
Staff perception of quality of management			0.274 (0.139)	0.267 (0.128)
Organisation level predictors				
Organisation score of management features present				3.51 (1.132)
Random parameters				
Level 3: Between organisations	34.253 (47.568)	22.529 (33.275)	13.406 (20.741)	3.676 (9.243)
Level 2: Between services	273.191 (54.823)	229.443 (44.678)	106.102 (28.444)	98.841 (24.298)
Level 1: Within individuals	144.704 (13.905)	120.094 (11.526)	117.663 (12.375)	116.949 (12.349)
Deviance Information Criterion (DIC)	2471.614	2407.568	1999.577	1975.018
Change in DIC		64.046	407.991	24.559

Note: All estimates are significant at 0.05 probability level or smaller.

organisational leaders previously reported in Bigby et al. (2019b). The present study has also confirmed findings from two earlier studies that good Active Support is predicted, at the individual level, by higher adaptive behaviour of service users, and, at the service level, by stronger practice leadership, and having six or fewer service users in a service (Bigby et al., 2019a; Bould et al., 2019). In addition, staff with a more positive perception of the quality of management was also predictive of good Active Support.

Somewhat unexpectedly, factors predictive of Active Support in previous studies drawn from overlapping data sets (Bigby et al., 2019a; Bould et al., 2019) were not predictive in this study: these were whether or not staff had been trained in Active Support and homogeneity of service users (the number of ABS groups represented

within a service) at the service level, and organisational size and time since adopting Active Support, at the organisational level. The limited variability in this data set, compared to the two earlier ones, provides the most plausible explanations for these differences. Unlike in the previous studies (Bigby et al., 2019a; Bould et al., 2019), data were collected at one rather than multiple time points, and at a time when all organisations had been implementing Active Support and monitoring progress annually over a number of years.

This maturity in implementing Active Support may account for the high percentage of staff (82%) having been trained in Active Support in the cohort of organisations in the present study. In contrast, there was greater variability in training of staff across the organisations at the varied time points captured in the studies reported

- **Individual level** accounts for 19% of variance within individual residents
- **Service level** accounts for 64% of the variance between services
- **Organisational level** accounts for 88% of variance between organisations

Figure 1. Predictors of good active support.

by Bigby et al. (2019a) and Bould et al., (2019). The findings of these two previous studies, together with those of earlier ones point strongly to the importance of Active Support training and its nature to the implementation of Active Support (Flynn et al., 2018). It would seem that variability in the number of staff with Active Support training will influence the quality of support provided, but only to a point, after which, it no longer has predictive influence. What that threshold point might be could not be determined from the present study, but the failure of this variable to predict Active Support quality suggests it was at least met, if not exceeded at the point of which 82% of staff had been trained.

Similarly, the absence of an association between homogeneity of service user needs in a service and the quality of Active Support in the present study may be accounted for by the fact that only 13 of the 71 services included service users who fell into three different ABS groups. There was greater variability in the data for this item in Bigby et al. (2019a) and Bould et al. (2019), in that the heterogeneity among service users was found to be associated with poor quality Active Support. Combined, the findings from the three studies suggests complementary evidence: that heterogeneity of service user support needs detracts from the provision of Active Support quality, while homogeneity removes this factor as an influence.

A further factor found predictive of Active Support in the previous studies Bigby et al., (2019a) and Bould et al., (2019), but not the present study, was time since implementing Active Support. Again, variability in these data evident in the previous studies was not found in this study, reflecting the fact that most organisations ($n = 9$) had been implementing Active Support for more than five years. This longer time of implementation may also account for the absence of an association between organisational size and quality of Active Support found by Bould et al., (2019). It is likely to take larger organisations longer than smaller ones to successfully implement Active Support. It may have been the relatively early success of smaller organisations in a short time period that was identified in the earlier studies (Bigby et al., 2019a), which disappeared as Active Support became embedded over longer periods.

A tentative hypothesis from the present study that is worthy of further investigation is that advantages of smaller organisations dissipate over time, and that, for larger organisations, a period of five years may be required to successfully implement and embed Active Support. It may also be that after five years, other organisational level factors confound the impact of time. For example, the qualitative data reported by Bigby et al., (2019b) indicates that disruption to the processes of implementation may result from changes to senior personnel or competing organisational priorities emanating from external factors. This proposition is supported by findings in earlier studies by Mansell and colleagues (2008, 2013) of low levels of good Active Support in organisations that had been implementing it for more than five years. They demonstrate the likely interaction between time since implementing Active Support, and other organisational or service level factors in achieving good support.

Implications for practice

The findings from the present study together with earlier studies of Active Support (Flynn et al., 2018; Bigby et al., 2019a; Bould et al., 2019; Bigby et al., 2019b) suggest the following features at the service and organisational levels are predictors of good Active Support: (1) staff trained in Active Support using classroom and in-situ methods; (2) strong practice leadership of individual direct support workers and their team through regular coaching, observation and feedback about their practice, discussion of Active Support in team meetings and individual supervision, shift planning, and support to maintain focus on the quality of life of the people they support as core to everything they do; (3) practice leadership structured so leaders are close to every-day practice, and their tasks are not split across different positions; (4) staff having confidence in the management of the organisation; (5) services not supporting more than six people under one roof; (6) people sharing accommodation having support needs that are not too different, and not all having challenging behaviour; and (7) senior leaders having a shared understanding of Active Support, and recognising and valuing high-quality practice. These features provide a blueprint for the design of services committed to delivering quality Active Support.

The definitions of each of these predictors and associated research measures could be translated into a set of evidence-based indicators of conditions, at the service and organisational levels, that are necessary for delivery of good quality Active Support. Indicators could be tailored to different audiences: consumers of services to assist in choice, the Commission to assist in service registration, and auditors or Commission for inspecting or monitoring services. Quality indicators of the nature described would build on, for example, the "What does good look like" checklist (Beadle-Brown & Ashman, 2016), with the resulting tool tested for reliability against research measures, such as the Active Support Measure. Importantly, however, this type of quality indicator is once removed from actual practice, and should not

replace regular observation of frontline practice by supervisors and practice leaders, using a tool that is easy to complete in a practice context.

Conclusion

Active Support is one of few areas in disability practice with not only an evidence base but in which predictive factors have been explored internationally. This evidence provides behavioural indicators of good Active Support practice, benchmarks of good practice, and practice guidelines. The present study has contributed further evidence to support the development of a set of indicators of factors at the service and organisational levels necessary for delivery of good Active support.

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