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ORIGINAL ARTICLE

What factors influence organisational readiness for change? Implementation of the Australian clinical pathway for the screening, assessment and management of anxiety and depression in adult cancer patients (ADAPT CP)

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Abstract

Aims Translation of evidence-based psycho-oncology interventions into routine care can significantly improve patient outcomes, yet effective implementation remains challenging due to numerous real-world barriers. A key factor that may influence implementation is organisational readiness for change. This mixed method study sought to identify factors associated with organisational readiness for implementing the Australian clinical pathway for the screening, assessment and management of anxiety and depression in adult cancer patients (ADAPT CP).

Methods We collected data from multidisciplinary staff across six Australian cancer services who were preparing to implement the ADAPT CP. Services were categorised as having 'high' versus 'mid-range' organisational readiness based on a median split on the Organizational Readiness for Implementing Change (ORIC) questionnaire (score range = 12–60). Qualitative data from the semi-structured interviews based on the Promoting Action Research in Health Services (PARiHS) framework were analysed thematically and compared for services with high- versus mid-range organisational readiness.

Results Three services with high- (mean ORIC range, 52.25–56.88), and three with mid-range (range, 38.75–46.39) organisational readiness scores were identified. Staff at services reporting higher readiness described a more collaborative and proactive service culture, strong communication processes and greater role flexibility. They also reported greater confidence in overcoming anticipated barriers and clearer strategies for addressing issues.

Conclusions Levels of organisational readiness were related to distinct qualitative themes. Targeting these issues in services where readiness is mid-range or low prior to full-scale roll-out may improve staff levels of confidence and efficacy in implementing psycho-oncology-focused interventions.

Keywords Organisational readiness · Implementation science · Cancer care services · Psycho-oncology

Background

The importance of evidence-based screening, assessment and management of psychosocial morbidity to promote improved outcomes in cancer patients is well-recognised [1, 2]. However, while shown to be feasible [3], uptake of psychosocial interventions has been slow and hampered by a lack of attention to the processes of translating interventions into routine practice. A thorough understanding of barriers and facilitators to this process is therefore crucial to increase the likelihood of effective, smooth and sustainable implementation.

Research on the process of implementation, which includes how an intervention is introduced, received and maintained by services [4], is still scarce in psycho-oncology, with key

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researchers in the field calling for greater focus on such translational research [4, 5]. The few existing translational studies have been consensus-based, focused on lessons learned and/or restricted to screening rather than aftercare and management [6]. Findings from assessments of clinical pathways in the general hospital context suggest that hospital settings may generate unique barriers [7], but little is known about implementation challenges specific to the tertiary cancer care context.

Implementation science focuses on factors that promote the systematic uptake of research findings and evidence-based practices into routine care [8]. A number of implementation frameworks have been developed to facilitate this process, including determinant frameworks, which focus on understanding and/or explaining the factors that influence successful implementation [9]. Most determinant frameworks, such as the Promoting Action Research in Health Services (PARiHS) framework [10], highlight the importance of contextual factors, such as receptiveness to change in an organisational setting.

In order to more fully understand and reliably measure and assess organisational factors, specific definitions and measures have been generated. Organisational readiness for implementing change is one such factor that has received increasing attention, with specific measures being created to assess its applicability in a range of settings [11, 12]. Existing research suggests organisational readiness may be a key precursor to the successful implementation of complex interventions in healthcare settings [11] and may also help to explain why some efforts to implement screening and management of psychological morbidity succeed, while others fail.

To our knowledge, organisational readiness has not been considered at all within psycho-oncology [13]. Organisational readiness, if studied early in the implementation process, may provide key information to guide the selection of implementation strategies to suit the healthcare context and needs of the population [14]. The current study therefore sought to address this gap and shed greater light on the factors associated with organisational readiness both generally and specifically to the psycho-oncology setting.

Study context

The Australian clinical pathway for the screening, assessment and management of anxiety and depression in adult cancer patients (ADAPT CP) [15] incorporates regular screening, triaging to a stepped care model with five levels of anxiety/depression, each with specific recommendations regarding the content, process and intensity of care. Full details are included in the ADAPT cluster randomised controlled trial (RCT) study protocol [16]. The ADAPT CP includes the ability to tailor its implementation to individual cancer services' available resources, referral networks and preferred models of care. Guided by a barrier and enabler analysis [17], intervention resources and implementation strategies were incorporated into the planned implementation of the ADAPT CP within a cluster RCT of 12 cancer services in New South Wales (NSW), Australia.

Objectives

The current study focused on early staff experiences of the ADAPT CP implementation as they related to organisational readiness. Specifically, we aimed to

1) Assess self-reported organisational readiness for change at commencement of ADAPT CP implementation;
2) Identify factors associated with any differences in levels of organisational readiness across services and
3) Identify factors specific to the introduction of a psycho-oncology intervention.

Methods

Design, participants, setting and procedure

This study used a convergent mixed methods design, in which both quantitative and qualitative data were collected at the same timepoint [18]. Participants were staff at six cancer services who were about to commence implementation of the ADAPT CP. Three services were in major city locations and three in inner regional areas, according to Accessibility Remoteness Index of Australia (ARIA) Remoteness Area (RA) classifications [19]. All staff were invited to complete the quantitative online survey via REDCap, and a purposive sub-sample of staff across clinical and non-clinical roles was invited to participate in a telephone interview. All participants provided informed consent to take part in the study. Data was collected at baseline, after 3 months of pre-implementation preparation and prior to full roll-out of the ADAPT CP. We present data collected within a cluster RCT, the ADAPT Program, funded by the CINSW (14/TPG/1-02). The study was approved by the Sydney Local Health District Human Research Ethics Committee, Protocol X16-0378 HREC/16/RPAH/522.

Quantitative data

Staff completed demographic items and the Organizational Readiness for Implementing Change (ORIC) survey [20], a 12-item measure with two subscales, i.e. change commitment

(a shared resolve among organisational members to implement a change) and change efficacy (collective capability to implement a change). The total score ranges from 12 to 60, with higher scores indicative of greater organisational readiness for change. The scale has strong psychometric properties and has been validated for use in real-world hospital settings [21].

Qualitative data

Semi-structured telephone interviews were conducted by a trained qualitative researcher (LG), who was knowledgeable of the ADAPT CP, but independent of the pre-implementation process at each service. Interviews were audio-recorded and transcribed verbatim. An interview guide was developed and informed by a recent systematic review of hospital-based implementation barriers and facilitators [7]. It explored perceptions of specific components of the ADAPT CP and more general insights into each service context. It was pilot tested by two authors (LG and PB).

Data analysis

Quantitative data were summarised using descriptive statistics generated in IBM SPSS Statistics [22]. Qualitative data were managed and analysed in NVivo qualitative data analysis software [23]. Thematic analysis was used to identify key themes derived inductively from the data. To ensure rigour of analysis, a subset (20%) of the transcripts were reviewed and coded separately by two authors (LG and PB) to identify preliminary concepts, with iterative discussion to refine codes and subcodes. Following this, the first author coded the remaining transcripts, with any ambiguity resolved through discussion with the other authors (PB, NR and HS). Similar concepts were grouped into themes, and patterns between themes and subthemes were identified and mapped into thematic nodes with NVivo, entering verbatim quotes. In line with qualitative research standards [24], every attempt was made to use reflection and reflexivity to mitigate any biases. Finally, both quantitative and qualitative data sources were then integrated visually to demonstrate the relationships between ORIC scores and qualitative themes.

Results

Participant sample details

Sixty-five staff across the six services provided quantitative data and 44 participated in interviews (see Table 1). Across services, response rate for the quantitative survey varied from 23 to 35%. The main reasons for refusing participation are related to workload or being on leave. Staff came from multiple disciplines including psychology, social work, medicine, nursing, allied health and clinical trials, administration and management.

Quantitative results

The mean ORIC total scores for each service are presented in Table 2. There was a significant correlation between the two ORIC subscales ($r = 0.991, p < 0.001$), indicating that services high in change commitment were also high in change efficacy.

Despite having experienced standardised preparation, services showed some variation in levels of readiness, with means varying from 38.75 to 56.88 across the six services out of a possible range 10–60. As the ORIC has no published cut-off scores to indicate high and low readiness, we used the median score from our results to explore differences in readiness. Based on the median score of 52, three services had overall ORIC means which fell above the median split. For ease of interpretation, we termed these services as 'high organisational readiness' services, and the three services that fell below the median were termed 'mid-range organisational readiness'. No services had overall scores at the lowest end of the ORIC. Item means for high- and mid-range readiness services are shown in Table 3. Items with the widest divergence between high- and mid-range services were the same items that had the lowest means for the sample overall, i.e. (1) confidence in co-ordinating implementation tasks and (2) confidence in managing the politics of implementation.

Qualitative results

Difference in ORIC outcomes

Qualitative analysis highlighted five key areas (culture, flexibility, beliefs about efficacy and sustainability, engagement and preparation) of difference for services with high- versus mid-range ORIC scores, either in theme content or frequency of occurrence (major versus minor themes). Quotes supporting each theme are provided in Table 4, with an additional table of quotes in Appendix Table 5.

Culture High readiness services were marked by strong service culture, a strong sense of identity and a belief in their abilities to take on implementation tasks despite workload and resource challenges. Staff at these services described their workplace culture as collaborative, proactive and supportive, with clear communication processes in place. Staff believed there was awareness of and engagement with the implementation at a whole site level. Staff at mid-range readiness services reported a greater sense of discord and fragmentation. These services were just as passionate and motivated regarding patient care as high readiness services, but some staff felt overstretched and were often frustrated by additional stressors

Table 1 Participant demographics

	Quantitative Sample	Qualitative Sample
Sample	65	44
	No. (%)	No. (%)
Age range		
18–25	1 (1.5)	1 (2.3)
26–50	45 (69.2)	29 (65.9)
51–75	19 (29.2)	14 (31.8)
Gender		
Female	59 (90.8)	39 (88.6)
Male	6 (9.2)	5 (11.4)
Role		
Psychosocial staff	13 (23)	7 (16)
Nursing staff	27 (47)	20 (46)
Medical staff	10 (18)	8 (18)
Allied health and clinical trials staff	4 (7)	2 (4)
Admin, technical support and non-clinical managers	3 (5)	7 (16)
Missing/not supplied	8	n/a
Total	65	44
Job status		
Full time	45 (69.2)	32 (72.7)
Part time	20 (30.8)	12 (27.3)
Years in role		
Mean (range)	6 (2 months to 25 years)	5.33 (5 months to 19 years)

such as redevelopment, increased patient volume and management changes. Participants expressed views such as 'this wasn't the right time' or was not what their service 'needed most'. Services' awareness of and communication about the ADAPT CP was more variable, with some staff fully aware and engaged, but others feeling confused or uninformed due to lack of established inter-disciplinary communication routes. This negatively impacted sense of readiness, in terms of both confidence and efficacy.

Flexibility High readiness services expressed a degree of flexibility and willingness to change behaviours and role responsibilities as new evidence about best practice emerged. This flexibility meant that multidisciplinary staff at these services were open to taking on new responsibilities related to the ADAPT CP, and felt confident they would be supported by colleagues if and when workload needed to be redistributed. This contrasted with mid-range services where staff expressed concerns about taking on extra tasks that did not fit with their current role, or for which they were not expressly trained, including psychosocial screening and triage conversations. Many staff, not just those on whom the workload fell, described the division of ADAPT CP labour as unbalanced. Mid-range services also reported greater division in attitudes toward the ADAPT CP; some staff (often involved in the implementation team or in a particular role) had positive

Table 2 ORIC means for each service

	ORIC total (possible range 10 to 60)	ORIC efficacy (possible range 7 to 35)	ORIC commitment (possible range 5 to 25)
Site A	52.25	30.37	21.87
Site B	56.88	32.38	24.50
Site C	53.18	30.27	22.90
Site D	39.20	22.00	17.20
Site E	38.75	21.25	17.50
Site F	46.39	26.39	20.00

Table 3 Means for each item of the ORIC by median split

	Overall group mean (range 1–5)	High readiness mean (range 1–5)	Mid-range readiness mean (range 1–5)	Difference between high and mid-range readiness
Commitment subscale				
1. People who work here want to implement the anxiety and depression pathway.	4.4	4.78	4.06	0.72
2. People who work here are committed to implementing the anxiety and depression pathway.	4.34	4.85	3.87	0.98
3. People who work here are motivated to implement this change.	4.15	4.56	3.77	0.79
4. People who work here are determined to implement the anxiety and depression pathway.	4.05	4.44	3.68	0.76
5. People who work here will do whatever it takes to implement the anxiety and depression pathway.	3.97	4.44	3.52	0.92
Efficacy subscale				
6. People who work here feel confident that they can keep the momentum going in implementing the anxiety and depression pathway.	4.05	4.48	3.64	0.84
7. People who work here feel confident that they can keep track of progress in implementing the anxiety and depression pathway.	4.03	4.52	3.58	0.94
8. People who work here feel confident that the organisation can get people invested in implementing the anxiety and depression pathway.	3.97	4.37	3.61	0.76
9. People who work here feel confident that the organisation can support people as they adjust to implementing the anxiety and depression pathway.	3.97	4.37	3.62	0.75
10. People who work here feel confident that they can handle the challenges that might arise in implementing the anxiety and depression pathway.	3.91	4.41	3.45	0.96
11. People who work here feel confident that they can coordinate tasks so that implementation goes smoothly.	3.86	4.48	3.29	1.19
12. People who work here feel confident that they can manage the politics of implementing this change.	3.71	4.30	3.16	1.14

attitudes, but others did not, largely due to workload or skill-based concerns. This created further tensions and less sense of organisational coherence or confidence in implementing the ADAPT CP. These factors showed triangulation with individual ORIC scale items, where greatest variance was shown between high- and mid-range services on the ORIC items assessing (1) ability to coordinate tasks and (2) manage politics, as shown in Table 1.

Beliefs regarding the efficacy and sustainability All services reported a strong patient-centred focus, but in high readiness services, this increased motivation due to the belief that the ADAPT Program would improve patient care, increase staff skills, save time and improve outcomes in the long term. In contrast, mid-range readiness services raised concerns that the ADAPT Program would not be sustainable due to lack of resources including psychosocial staff, both within the service and the broader community: 'We don't have a psychologist full time and …often there's a large waiting time'(Site E, 156, cancer care coordinator).

Engagement with pre-implementation process High readiness services perceived the pre-implementation process as effective and supportive, reporting that concerns were addressed and resolved during the preparatory meetings with the research team. They reported a sense of ownership resulting from the engagement process and the ability to tailor the ADAPT CP to fit their system and patients. Despite all services experiencing standardised engagement strategies over the same time period, staff at mid-range readiness services reported less ownership and a greater sense of imposition. These staff often felt they had either not been sufficiently engaged in the process or their views and concerns had not been heard by the lead team at their service. This was often due to the ADAPT Program being led by one discipline or tumour stream within the service, rather than being more widely implemented across the whole cancer service.

Implementation preparation High readiness services showed anticipation of potential barriers and ways to ensure long-term motivation of frontline staff and sustainability. They believed that the ADAPT CP would fit in with their existing systems and processes. They reported awareness that while not everything could be planned, they adopted an attitude of 'rolling with' unpredictable changes that may arise during the implementation and a shared confidence that they would 'figure it out'. This confidence was fostered by a belief that a team member would have considered potential barriers: 'I'm sure they – have brought it up, I'm just not aware of it' (Site A, 169, nurse). This faith in their colleagues and their service was a

Table 4 Representative quotes for each theme

	Culture	Flexibility	Beliefs about ADAPT	Engagement	Implementation preparation
High readiness major themes	'We're a team so everything we do is sort of a team effort. We do not generally just push something to one person.' Site B, 387, cancer care coordinator	'We work in Oncology, we are chucked new stuff the whole time. I would not imagine anyone's fazed about picking up a new tool and running with it.' Site C, 381, nurse	'We have put our hands up to participate in it because we think it's worthwhile doing from a clinical perspective and from what we can learn from the perspective.' Site B, 380, oncologist 'the motivation is… patient focus… if it's going to make our processes a lot better, and you can identify the patients and get them referred a lot easier, then that reduces the amount of workload on everybody…it's more defined and clearer.' Site C, 382, administration	'The team have taken this on really well and have felt good ownership around it and have come up with the processes of how they'll deal with things as they come and I think they feel like they own it.' Site B, 146, management	'When we have raised concerns, all the solutions have been, um, quite palatable and equitable, so everyone is happy.' Site A, 382, administration
Mid-range readiness major themes	'I think the lead team were really prepared but no one else seemed to be taking much interest in it. I mean our manager, certainly I feel, should have been at all of meetings. And she should have taken more interest in the whole thing….But she wasn't there so... I think it comes from the top. If people are interested, it needs to be pushed from the top and it wasn't' Site D, 155, cancer care coordinator	'Our major role is keeping patients out of hospital and triaging their symptoms and things. We're not psychologists, so we are anxious as in what the patient's going to expect from us.' Site E, 157, cancer care coordinator	'People have questioned, …why are we having this type of thing coming in when we need a lot of other, probably urgent other things which, we have been requesting.' Site D, 152, nurse 'I think there's a bit of reservation after the [previous system], because that was an abysmal failure. It was quite problematic and – and people are… a bit hesitant.' Site E, 395, adminis-trator 'I think staff feel very stretched… at the best of times, so one of the barriers… was a perception that it would increase workload' Site F, 509, management	A lot earlier, not just like a couple of weeks or a month or two before it was going to be rolled out, and I think it should have been discussed with the, the NUM and the educators as to how it was going to happen because it does involve the nursing staff. Site F, 158, nurse	'It's a bit like they did not tell us everything up front and we agreed to stuff and then as the meetings when along, those little things became a lot bigger…. … It was more overwhelming, more time-consuming than what we originally thought we were going to be doing.' Site E, 157, cancer care coordinator

key to the confidence with which they moved toward the implementation.

At mid-range services, staff had concerns about the way ADAPT had been set up: 'I've always been positive for it, it's just about how it's done' (Site F, 534, nurse), which created greater anxiety regarding potential barriers and less clarity around how they might resolve issues. They reported feeling unable to proactively raise concerns, or where concerns had been raised, felt they were not satisfactorily resolved. Skill concerns arose despite the specific ADAPT training, and at some services, the lag-time between training and use was noted as a problem. Staff reported a lack of support from higher level management staff and felt there was not the time or capacity to address potential challenges, or build psychosocial skills.

Factors specific to psycho-oncology

The five key areas of difference between services with high- and mid-range readiness identified above related to universal concerns that may impact the implementation of any hospital intervention. However, subthemes within each area indicated that the introduction of a psycho-oncology-specific intervention may be a complicating factor that has its own specific influence on organisational readiness. Specifically, concerns related to lack of mental health literacy or training and perceptions about the sustainability of a psycho-oncology clinical pathway contributed to a decreased sense of readiness among staff. Staff also highlighted the lack of time to build skills required for new roles as a factor in bringing in a psycho-oncology-specific change.

Discussion

This is the first study to explore organisational readiness for change in implementing a psycho-oncology clinical pathway. Specifically, we sought to assess self-reported organisational readiness at implementation baseline, to identify factors associated with differences in levels of organisational readiness, and to identify factors specific to the introduction of a psycho-oncology intervention. Using a mixed methods approach, we identified key differences between services with high- versus mid-range self-reported readiness. Our findings suggest that services that report higher levels of readiness are flexible and responsive to changing circumstances, with strong service-wide communication strategies in place, as well as planned strategies to monitor and support change. These services were characterised as having staff who were comfortable taking on the responsibilities of the ADAPT CP and who believed it fitted with their current role. They were more likely to embrace its implementation and see it as an opportunity to improve long-term outcomes for patients, staff and the service. This finding is in line with implementation theories suggesting that receptive cultures are more likely to implement new interventions successfully [25].

In contrast, staff at services with mid-range readiness reported a more divided culture, with lack of clarity or confusion about organisational goals for participation in the ADAPT Program, how decisions were made and who had ownership over the process. These findings were paralleled in the quantitative data, where ORIC items related to confidence in coordinating implementation tasks and managing politics of the implementation received the lowest ratings. Both these factors have been noted as potential barriers in previous organisational research [7]. The politics of any implementation may be impacted by variation in the level of support and commitment, which are more likely to occur when leaders communicate inconsistent messages, when sub-groups of staff have limited opportunity to share information or when organisational members do not have a common basis of experience [11]. Clear communication regarding service goals for the implementation may assist in overcoming perceived political tensions. The psychosocial focus of the ADAPT CP also appeared to exacerbate concerns in some cases, particularly where staff felt under-skilled and under-supported to improve their psychosocial care abilities. Psychosocial clinical pathway implementation often involves multidisciplinary staff, who may vary in their levels of mental health literacy, competence and perceptions of relevance. The qualitative data revealed that lower confidence led to doubt and decreased readiness, compounded by perceived lack of support from senior staff. For this reason, clear and engaged leadership [26], along with provision of extra support and training are critical, as well as prioritising time for staff to attend training.

Our results are in line with existing implementation science frameworks such as the PARiHS, which highlight the need for greater focus on contextual factors [25]. In the case of the ADAPT CP, organisational readiness is clearly influenced by beliefs regarding evidence for change, and how change facilitation is experienced. In particular, how organisational members feel about a change to current practice, and the value they place on that change can be crucial [27]. This finding is borne out in our data, where services with the highest readiness had a strong sense of the value that the ADAPT CP would contribute at both a patient and service level. This is a significant step in preparing for change; if staff do not see the intervention as relevant to the organisation's mission, persuasion alone may not be sufficient for substantive change. This is particularly relevant for integrating psychosocial change in cancer care, where services are often juggling many significant demands—any new intervention that demands changes in behaviour or practices must clearly highlight the ultimate benefits to both staff and patients. The data suggest that when change is perceived as collaborative and optional, clinicians feel empowered to tailor and engage with the process, rather than feeling imposed upon.

Theoretical and clinical implications

These findings add to the body of knowledge about the existing culture of cancer care services and how these factors may influence the success of interventions. Implementing change can be demanding on staff and health services. Our findings are consistent with previous research that interventions which are flexible and engage with needs of end users are likely to produce better outcomes [28]. The benefits of early assessment of readiness cannot be underestimated. Readiness can provide insight into the capacity and commitment of end users prior to roll-out, to see if additional support or changes are required. Using a validated measure such as the ORIC, combined with early-stage stakeholder feedback, can guide the tailored selection of implementation strategies. Within our study, the two ORIC subscales of commitment and efficacy were highly correlated, suggesting that using strategies to support one area may increase the other; for example, targeting efficacy by increasing available resources may increase commitment to implementation. Our qualitative results mirror these findings, suggesting that readiness is shaped both by culture and by perception of the intervention, which in turn may influence each other. It should be noted, however, that organisational readiness for change is not the only factor that may contribute to the uptake of interventions, successful or otherwise. Other factors, such as engagement of key stakeholders in pre-implementation efforts [29, 30], understanding drivers of resistance to change in health professionals [31], as well as policy and funding support for the use of evidence in practice [32], are also highly relevant. There are limitations to incorporating all such factors into the design of a cluster RCT. We selected readiness for change given the need to establish evidence about its impact in the psycho-oncology literature.

Study strengths and limitations

This study addresses an area that has previously been lacking in psycho-oncology and informs our understanding of this topic through the use of formally collected mixed methods data. The use of both a validated scale and in-depth interviews allowed us to understand the breadth and depth of organisational readiness. We employed rigorous methods in gathering and analysing data from a range of multidisciplinary staff at both urban and regional services.

Our findings are limited by the small sample size at each service and single time point of data collection, allowing for the use of descriptive statistics only, with only associational findings. Assessment of readiness post-engagement limited our capacity to assess the impact of pre-implementation strategies. We decided to assess readiness only post-engagement because we sought to specifically assess readiness to implement the ADAPT CP rather than general change; as such, it was not possible for staff to complete these items until they had been educated on what the ADAPT CP implementation entailed.

Future directions

A question that the current study cannot answer is whether mid-range readiness to implement change is sufficient to enable practice change. As the ADAPT Program has inbuilt strategies of ongoing engagement, this may buffer against mid-range readiness and support staff by allowing them a forum to air concerns and continue to tailor options in real time. Our ongoing research will address this question, following the enrolled services through their mid-point and final data collection at 6 and 12 months.

Conclusion

Assessing organisational readiness at the beginning of implementation can provide important insights about the culture, resources and beliefs of the services in which change is planned. The factors associated with readiness presented here may serve as a useful starting point for future implementation studies wishing to target organisational culture early to enhance likelihood of sustainable implementation success.

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Authors' contributions LG, PB, HS and NR were involved in conceptualising the manuscript. JS and LM provided clinical and academic expertise throughout the ADAPT pre-implementation process. LM and JC oversaw quantitative data collection. LG carried out all

qualitative interviews. LG, HS, PB and NR contributed to the development of the thematic framework. LG wrote the first draft of the manuscript. NR, HS and PB made significant contributions to preliminary drafts. All authors contributed to making revisions of the later drafts, and all authors read and approved the final manuscript.

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Data availability The data have been fully analysed for this manuscript and therefore are not publicly available, although the researchers are happy to consider reasonable requests via a written request to the corresponding author.

Compliance with ethical standards

Competing interests The authors declare that they have no competing interests.

Code availability Not applicable.

Ethics approval The study was approved by the Sydney Local Health District Human Research Ethics Committee, Protocol X16-0378 HREC/16/RPAH/522.

Consent to participate All participants provided informed consent to take part in the study.

Consent for publication All participants were informed about the intention to publish the findings and gave informed consent.

Appendix

Table 5 Additional quotes for each theme

	Culture	Flexibility	Beliefs about ADAPT	Engagement	Implementation preparation
High readiness major themes	'My team are very keen to do it, irrespective of the difficulties it's going to pose because they see it as important… if they think it's an advantage for the patients… we'll work without stopping … Instead of finding reasons for something not to happen, we seem to find ways to make it happen' Site C, 146, management	'It's a small unit and I think the nature of cancer and the service that we provide is ever-changing and evolving. So I think they are pretty good with accepting change.' Site C, 392, nursing unit manager	'People are going to be resourced better, resourced, that's what I think, opportunity for, um, maybe quicker improvement, quicker improvement in the mental health, and they are going to be more responsible for the information that they take in.' Site A, 161, psychologist	'We were given the opportunity for ownership from the very beginning…they said to us, you know, every unit's different and only we know how ours operates… that was certainly very open and transparent from the beginning.' Site A, 395, nursing unit manager	'It's just a more formal process, really…it was like oh, okay, so, it's not really going to take up any more time, it's integrated well, … without creating too much extra paperwork … I think it's really good.' Site B, 169, nurse
Mid-range readiness major themes	We're a bit dysfunctional … the leaders do the best they can but…it's all new leadership, like it's all changing and so with movement, things like this get left to you know, for people just to handle it rather than it be a centre thing. Site D, 154, administration	'If people do not feel that they have been given the right educational training for it, um, they are probably a little bit apprehensive of, you know, wanting to put their foot in the water to roll it out… they just, put the stopper up straight away because they cannot see a real outcome at the end of it.' Site D, 152, nurse	'You can do the studies but at the end you need to know what is the benefit to the patient. Whether these type of studies, in the past, have not done anything benefit to the patient. And whether the - anybody has changed the existing system.' Site E, 151, oncologist	'I think the general nursing staff on the floor have got no idea about it…[they] know that it exists but they would not know much more than, what is it? They're not negative to it, it's just - they are just not aware of it. It's not one of the things they think about.' Site F, 534, nurse	'I'm, sort of, disappointed now that it's only in clinic because I have not got to use it at all, so you sort of think I'm going to forget most of what was told me in that one-on-one because I have not seen it since, and that was two months ago.' Site E, 153, nurse

References

1. Andersen BL, Thornton LM, Shapiro CL, Farrar WB, Mundy BL, Yang HC, Carson WE (2010) Biobehavioral, immune, and health benefits following recurrence for psychological intervention participants. Clin Cancer Res 16(1):3270–3278
2. Giese-Davis J, Collie K, Rancourt KMS, Neri E, Kraemer HC, Spiegel D (2011) Decrease in depression symptoms is associated with longer survival in patients with metastatic breast cancer: a secondary analysis. J Clin Oncol 29(4):413–420
3. Li M, Macedo A, Crawford S, Bagha S, Leung YW, Zimmermann C, Fitzgerald B, Wyatt M, Stuart-McEwan T, Rodin G (2016) Easier said than done: keys to successful implementation of the distress assessment and response tool (DART) program. J Oncol Pract 12(5):e513–e526
4. Jacobsen PB (2017) New challenges in psycho-oncology research II: a health care delivery, dissemination, and implementation research model to promote psychosocial care in routine cancer care. Psycho-Oncology 26(4):419–423
5. Rankin NM et al (2019) An implementation science primer for psycho-oncology: translating robust evidence into practice. J Psychosoc Oncol Res Pract 1(3):e14
6. Bultz B, Groff S, Fitch M, Blais MC, Howes J, Levy K, Mayer C (2011) Implementing screening for distress, the 6th vital sign: a Canadian strategy for changing practice. Psychooncology 20: 463–469
7. Geerligs L, Rankin NM, Shepherd HL, Butow P (2018) Hospital-based interventions: a systematic review of staff-reported barriers and facilitators to implementation processes. Implement Sci 13(36): 36
8. Eccles MP, Mittman BS (2006) Welcome to implementation science. Implement Sci 1(1). https://doi.org/10.1186/1748-5908-1-1
9. Nilsen P (2015) Making sense of implementation theories, models and frameworks. Implement Sci 10(53):53
10. Kitson A, Harvey G, McCormack B (1998) Enabling the implementation of evidence-based practice: a conceptual framework. Qual Health Care 7(3):149–158
11. Weiner BJ (2009) A theory of organizational readiness for change. Implement Sci 4(1):67
12. Scaccia JP, Cook BS, Lamont A, Wandersman A, Castellow J, Katz J, Beidas RS (2015) A practical implementation science heuristic for organizational readiness: R = MC(2). J Community Psychol 43(4):484–501
13. Weiner BJ, Amick H, Lee S-YD (2008) Review: conceptualization and measurement of organizational readiness for change:a review of the literature in health services research and other fields. Med Care Res Rev 65(4):379–436
14. McCormack B, Rycroft-Malone J, DeCorby K, Hutchinson AM, Bucknall T, Kent B, Schultz A, Snelgrove-Clarke E, Stetler C, Titler M, Wallin L, Wilson V (2013) A realist review of interventions and strategies to promote evidence-informed healthcare: a focus on change agency. Implement Sci 8:107
15. Butow P, Price MA, Shaw JM, Turner J, Clayton JM, Grimison P, Rankin N, Kirsten L (2015) Clinical pathway for the screening, assessment and management of anxiety and depression in adult cancer patients: Australian guidelines. Psychooncology 24(9): 987–1001
16. Butow P et al (2018) Comparison of implementation strategies to influence adherence to the clinical pathway for screening, assessment and management of anxiety and depression in adult cancer patients (ADAPT CP): study protocol of a cluster randomised controlled trial. BMC Cancer 18(1):1077
17. Rankin NM, Butow PN, Thein T, Robinson T, Shaw JM, Price MA, Clover K, Shaw T, Grimison P (2015) Everybody wants it done but nobody wants to do it: an exploration of the barrier and enablers of critical components towards creating a clinical pathway for anxiety and depression in cancer. BMC Health Serv Res 15:28
18. Guetterman TC, Fetters MD, Creswell JW (2015) Integrating quantitative and qualitative results in health science mixed methods research through joint displays. Ann Fam Med 13(6):554–561
19. Department of Health (2011) Accessibility Remoteness Index of Australia (ARIA) Remoteness Area (RA) Available from: https://www1.health.gov.au/internet/publications/publishing.nsf/Content/ARIA-Review-Report-2011~ARIA-Review-Report-2011-2~ARIA-Review-Report-2011-2-2-3#:~:text=ARIAisageographicaccessibility,servicesinnon%E2%80%93metropolitanAustralia.&text=ARIAisacontinuousand,to15(highremoteness). Accessed on 13 September 2020
20. Shea C et al (2014) Organizational readiness for implementing change: a psychometric assessment of a new measure. Implement Sci 9(7). https://doi.org/10.1186/1748-5908-9-7
21. Storkholm M et al (2018) Assessing the reliability and validity of the Danish version of organizational readiness for implementing change (ORIC). Implement Sci 13:78
22. (2016) IBM SPSS Statistics for Windows, Version 24.0. IBM Corp: Armonk
23. (2018) NVivo Qualitative Data Analysis Software, Version 12. QSR International Pty Ltd
24. Malterud K (2001) Qualitative research: standards, challenges and guidelines. Lancet 358:483–488
25. McCormack B, Kitson A, Harvey G, Rycroft-Malone J, Titchen A, Seers K (2002) Getting evidence into practice: the meaning of context. J Adv Nurs 38:94–104
26. Aarons GA, Sommerfeld DH (2012) Leadership, innovation climate, and attitudes toward evidence-based practice during a statewide implementation. J Am Acad Child Adolesc Psychiatry 51(4): 423–431
27. Herscovitch L, Meyer JP (2002) Commitment to organizational change: extension of a three-component model. J Appl Psychol 87(3):474–487
28. Greenhalgh T et al (2004) Diffusion of innovations in service organizations: systematic review and recommendations. Milbank Q 82(4):581–629
29. Boaz A, Hanney S, Borst R, O'Shea A, Kok M (2018) How to engage stakeholders in research: design principles to support improvement. Health Res Policy Syst 16(1):60
30. Concannon TW, Fuster M, Saunders T, Patel K, Wong JB, Leslie LK, Lau J (2014) A systematic review of stakeholder engagement in comparative effectiveness and patient-centered outcomes research. J Gen Intern Med 29(12):1692–1701
31. de Wit M, Kleijnen M, Lissenberg-Witte B, van Uden-Kraan C, Millet K, Frambach R, Verdonck-de Leeuw I (2019) Understanding drivers of resistance toward implementation of web-based self-management tools in routine cancer care among oncology nurses: cross-sectional survey study. J Med Internet Res 21(12):e14985
32. Liverani M, Hawkins B, Parkhurst JO (2013) Political and institutional influences on the use of evidence in public health policy. A systematic review. PLoS One 8(10):e77404