

From clinical guidelines to clinical care – does employee involvement make a difference to implementation?

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Abstract

Background: Implementation of new knowledge into routine care is a complex endeavour that requires innumerable variables. Involving employees in the change process, good planning and communication as well as a commitment to training has been highlighted as important factors for successful implementation. Acknowledging change as a process may also be helpful. The aim of this paper was to describe the initial phase of the implementation process in changing practices within a child and adolescent mental health service.

Method: Prior to the five-year project, an external service evaluation was carried out. The employees expressed a need for a clear direction from management to guide their clinical practice. A vision and strategy for the service was developed. Employees participated in the process of developing *clinical standards* during the first phase of implementation.

Results: Fixsen's four stage model and the PSDA circle were used to guide the implementation process. The employees developed a template for *clinical standard* based on national and international clinical guidelines. During the period, 17 clinical standards were established and 10 new evidence based methods were implemented. All service leads (13) and a group of senior clinicians (32) were invited to participate in an evaluation five years after the initial service evaluation. There was overall agreement that the mental health service was developing positively ensuring high quality services for children and adolescents. In addition, both groups agreed that the introduction of clinical standards was important in ensuring quality care.

Conclusion: Involving employees in the implementation process seemed to be an important factor in successfully changing a mental health service.

Introduction

In line with an expansion in research and proven methods during recent decades, expectations of delivering evidence-based practice are increasing. In many ways this has challenged existing culture within mental health services where clinical autonomy has long been cherished and a disregard for clinical guidelines reported [1]. The difficulty in integrating research findings into clinical care has been described as the "research practice gap" [2, 3].

Barriers to changing practice have been reported to include a number of factors such as administrative constraints (eg. lack of time), clinical uncertainty, negative staff attitudes, anxiety about changing practice, information overload as well as a lack of culture and leadership [1, 4]. There continues to be uncertainty about clinically meaningful and sustainable effect of treatment guidelines on patient outcomes and how best to implement such guidelines for maximal benefit [5, 6]. While the health and mental health literatures describe several potentially promising implementation strategies [7], the evidence of their effectiveness remains less evaluated [8-12]. The general advice is therefore to use low cost approaches when planning organisational or clinical changes [4, 7].

Studies focusing on facilitating factors have found that the use of evidence-based practices in mental health services is associated with proficient organizational cultures [13-16]. Clinicians who work in proficient cultures report that they are expected to be effective and there is evidence that mental health organizations with proficient cultures provide higher quality service and better outcomes [17, 18, 19, 20] [14, 17-19].

The concept of employee-driven innovation (EDI) is also receiving increasing attention [20, 21]. Proponents of EDI suggest that in the course of their working days employees capture significant information and insight into the running of an organisation and its potential for improvement. Furthermore, they claim that EDI provide higher self-esteem to employees through empowerment. Alignment between employee-driven ideas and management priorities is important to ensure that ideas are implemented, to improve morale and showing employees that they are being listened to. In support of this claim, it appears that communication that makes use of active participation and involvement, using for instance audits and feedback systems, have greater effect than passive dissemination [10, 11].

Positive impact on patient and staff outcome in the implementation of guidelines furthermore include training and performance management [6, 22].

Fixsen et al. has identified that good implementation includes at least four stages; exploration, installation, first implementation and full implementation [8]. Although the initial exploration stage is considered particularly important this is often neglected by managers [10].

With respect to the more practical ways to facilitate the change process, Deming's PDSA circle (Plan-DO-Study-Act) is frequently used as a practical feedback system tool during all stages of implementation [23].

In summary, key themes with respect to implementation of evidence based practice point to the importance of developing a culture that embraces evidence based practice and alignment between managers and staff in priorities for the service. More specifically change requires good exploration, planning and communication as well as a commitment to training and involvement of employees. There continues however to be a call for research to improve methods for dissemination and implementation [4, 7, 13].

Background

The process of change described in the present paper took place in a child and adolescent mental health service (CAMHS) consisting of seven outpatient teams, two specialized teams and three hospital wards (Haukeland university hospital). The change process was part of a five-year project following a critical service evaluation.

Prior to the five-year project, an external service evaluation was carried out in 2012. The service evaluation was initiated by the head of service and carried out by consultants from the hospital's human resource (HR) department. The aim of the evaluation was to examine to what extent the department's organizational structure and clinical practices were experienced as beneficial. The evaluation consisted of interviews with 40 individuals; service leads, key senior clinicians, trade union and safety representatives, service users and staff from collaborating units.

The results of this service evaluation highlighted that levels of staff resources and expertise were perceived as satisfactory. Dissatisfaction focused on a perceived exclusive focus on operational and administrative issues, a failure to address the wide variety of approaches practiced within the service, and the absence of a clear strategy specifically to guide clinical practice.

Aims of study

The present paper describes and evaluates the first stage of a five-year service improvement project. The overall aim of the project was to optimize clinical care through introducing a clear direction for the service, disseminating a range of evidence-based methods and identifying effective organisational models for low frequency client groups. The aim for the first stage described in this paper, was to facilitate the development of a culture for evidence-based practice and to establish the future direction of the service.

Methods

CAMHS vision and strategy

Based on the recommendations from the evaluation carried out by HR in 2012, a working group consisting of managers, clinicians, union as well as user representatives, developed a vision and service strategy. The conclusion was a vision; *"to develop excellence in service delivery, equality in access across the service, a patient centred approach and evidence based practice"* and a service strategy which identified a range of clinical and organisational areas in need of development. The task of disseminating the vision and strategy was then passed onto a member of staff with previous experience of implementation.

Implementing the first stage of the CAMHS vision and strategy.

In addition to identify a plan for disseminating the overall aims identified in the strategy, great consideration was given to the process of implementation. To transform working practices it was decided to ensure sufficient space for planning and exploration, EDI, a clear communication strategy as well as an extensive training programme.

To facilitate a well-structured service development plan, Fixsen's four stages guided the implementation process [8]. The first stage, the exploration stage, involves creating a team, assessing needs, exploring evidence and usability of interventions. The process described below belongs to the exploration stage.

In order to ensure employee involvement, an important priority was to invite both clinicians, researchers and managers to participate in the process. A steering group consisting of director of service and two consultant psychiatrists, coordinated activities during the exploration stage (two members were part of the management team and all of them had background as researchers). The details of the involvement of a broader staff group is described below.

In addition to determining how best to explore the evidence, an essential task was to present and communicate research literature to staff clearly and in clinically relevant ways. To ensure structure to the development and improvement cycle, Demin's four steps "Plan, Do, Study, Act" (PDSA) circle was adopted as a useful tool [23].

Step 1. Plan: This step involves identifying a goal or purpose, formulating a theory, defining success metrics and putting a plan into action.

The goal was to develop a tool with the purpose of providing staff with quick access to relevant research literature and recommendations for evidence based practice. These tools would serve as *clinical standards* for the service and contribute to identify the requested direction of the service. Success metrics would be that clinicians perceived the standards as useful and that later service development and implementation adhered to recommendations.

Step 2. Do: This stage involves the implementation of the components, such as making a product.

In order to provide easy access to relevant research literature, it was decided to use Norwegian, English and American clinical guidelines as the main source of information. The term clinical guidelines refers to evidence based recommendations for health and care with the aim of optimizing patient care, how to diagnose and treat a range of medical conditions. These are informed by a systematic review of evidence. The purpose of guidelines is to improve clinical effectiveness by implementation of evidence –based care in daily practice [24, 25].

The steering group was directing the development of clinical standards for the service in the following way: Pairs of clinicians were asked to summarize relevant clinical guidelines and to present these to the management team. The presentation of the summary of each guideline gave rise to discussions highlighting service development and training needs. This information created the basis for Fixon's second stage, the preparation stage, which among other things included the development of a parallel staff training and organisational plan. To ensure that key information from guidelines would inform clinical practice it was decided to operationalize existing summaries. Clinicians provided the first draft of the clinical standards. The steering group provided quality control of each standard.

Step 3. Study: At this stage, outcomes are monitored to test the validity of the plan for signs of progress and success, or problems and areas for improvement.

Following a collaborative process between the steering group and the clinicians, a template for clinical standards was agreed.

Step 4. Act: This step closes the cycle, integrating the learning generated by the entire process, which can be used to adjust the goal or methods, reformulate a theory altogether, or broaden the learning.

Five draft clinical standards underwent piloting before the final clinical standard template was established. The piloting took place within the service during a 6 months period.

Evaluation of the process and service development.

In 2017, five years after the initial service evaluation, a second evaluation took place through a review of achievements and an evaluation of employees' perception of change within the service as well as the process.

Review of achievements:

The review included; results of the process of developing and finalising the template of the clinical standards, the number of clinical standards developed as well the effect recommendations in these had on implementation of evidence based methods.

Evaluation of employees' perception of change and process:

Method: The HR department developed a structured questionnaire in collaboration with the CAMHS management team, with the aim of designing a simple questionnaire that was easily understood by the respondents and quick to answer – and thereby increase the response rate.

The questions were consistently worded in a positive manner. There is a risk of acquiescence or extreme response bias when using only positively worded questions [26, 27]. However it is well-known that including a mix of both positively and negatively worded questions can also create new challenges (such as confusion and incorrect answers) [28].

The questionnaire was distributed and collected electronically, asking about areas of implementation and clinical management.

The seven questions are presented in Table 1. Each question had a score where 1 was "totally disagree", 2 "disagree", 3 "both disagree and agree", 4 "agree", and 5 "completely agree".

Participants - Selection criteria: All employees or their equivalent replacements (if left the service) that were interviewed in 2012 were included (service leads and key senior clinicians).

Statistical analyses

Descriptive analyses were used to describe the outcome measures with mean, standard deviation (Table 1, seven answers). We compared mean values of the seven answers for the senior clinicians (N=32) and the service leads (N=13) using Paired Sampled t-test. Secondly, a linear regression analysis was carried out using one question "CAMHS is developing in the right direction» as the dependent variable and two other questions as independent variables. This was done to explore possible factors facilitating the development of the CAMHS. A p-value of <0.05 was considered statistically significant. The SPSS statistical package version 24.0 (IBM SPSS Statistics, IBM Corporation) was used for all analyses [29].

Results

Achievements during the exploration stage.

Initially the draft clinical standards provided by clinicians varied from 10 to 15 pages. As stated previously, the goal was to develop a tool that would provide staff with quick access to relevant research literature and recommendations for evidence based practice. Important considerations were therefore that these could be possible to read by busy clinicians, that standards were perceived as clinically useful and that later service development and implementation adhered to recommendations.

A template limited to a two page, operationalized description included the following elements: When to use, diagnostic criteria, assessment, and treatment methods. In addition, there were notes recommending case formulation and regular times for evaluation. The standards included references to the clinical guidelines that formed the basis of the standards [24, 25]. Clinicians responsible for summaries and the steering group negotiated the final content of the standards.

During the five-year period, 34 senior clinicians participated in developing altogether 17 clinical standards. Examples of the content of clinical standards included categories of disorders such as eating disorders, anxiety disorders, mood disorders, ADHD, Autism.

Clinical standards became available for all staff in the hospital “electronic quality control handbook” and updated as new guidelines have become available.

Although it could be argued that training and implementation of new methods belong to the preparation and implementations stages [8] it is, for the purpose of highlighting the effects of the clinical standards, considered relevant to report that between 2013 and 2017 staff received training in 10 new evidence based methods, all recommended in clinical guidelines and thus local standards. The process of implementing these methods as well as the organisation of the service is not addressed in this paper.

Evaluation of employees’ perception of change

Evaluation of employee’s perception of change took place in 2017, five years following the initial evaluation and was performed asking seven questions. Results are given in Table 1.

Participants For the invited employees 45 of 60 (75%) completed the questionnaire in 2017. All service leads participated (13 (29%)). More than one third (18/45, 40%) of the respondents were also interviewed in the 2012 evaluation.

Implementation and management The results of the evaluation show that both service leads and clinicians tend to agree that the mental health service is developing positively, ensuring a high quality service for children and adolescents (Table 1). Furthermore, both groups agreed that the introduction of clinical standards was particularly important in ensuring quality care. The highest score was found for the statement “the development of clinical standards has contributed to clarify the clinical direction of the service” with a score of 4.5 (SD: 0.6). There were no differences in ratings between service leads and clinicians on this item.

On the question about how “they perceived themselves to be involved in developing clinical standards” there was a statistically significant difference between service leads and clinicians with the clinicians rating themselves as having been slightly less involved than service leads.

In order to explore employee involvement in the process, a linear regression analysis was carried out. The score of the question “CAMHS is developing in the right direction» was used as the dependent variable and the two variables; question 1) “The clinical standards have contributed to clarify the professional direction of CAMHS”, and question 2) “Employees in CAMHS have been positively involved in the development of clinical standards”, as independent variables. Only employee experience of involvement was significant with 14% of the explained variance of CAMHS development in the right direction (adjusted R: 0.14; 95% CI 0.1 to 0.7; $p < 0.05$).

Discussion

During a five-year period, managers and clinicians were involved in developing clinical standards as the first stage of implementing a CAMHS vision and strategy. The content of the standards was based on the advice given in clinical guidelines. The purpose was to communicate and operationalise the direction of the service through involving employees in developing a tool containing clinically useful information of evidence based practice. In addition, this would give rise to a staff-training plan. 17 standards were developed and 10 evidenced based methods were implemented during the time period.

All service leads and a group of senior clinicians participated in an evaluation of the process. There was an overall contentment with the service development. In addition, both groups agreed that the introduction of clinical standards was important in ensuring a clear direction for the service and quality care.

The involvement of the employees in the change process seemed to be one of the key factors in successfully changing the service.

The knowledge that passive dissemination of information has limited effect on staff behaviour [1] made us actively use EDI in the implementation process. Anchoring the implementation process among service leads was another priority. We suggest that

the participation of service leads and clinicians created ownership, engagement and a sense of responsibility for developing a shared culture. The 2017 evaluation outcomes appears to support this understanding, highlighting “involvement of employees” as some of the variance explaining staff perception that “CAMHS is developing in the right direction”. This finding is in line with the notion of EDI [20].

An important aspect of the strategy was to ensure the use of research and evidence based knowledge in the clinical setting. As highlighted in the introduction, one of the barriers to implementing clinical guidelines include information overload [1]. Although clinical standards aimed to be true to the content of national and international clinical guidelines, information in these needed to be succinct, focusing only on key aspects of assessment and interventions. The standards thus became effective tools to transport research information into the clinical setting and to reduce the “research practice gap” [2]. The fact that the recommendations set out in clinical standards were followed up with training and the implementation of recommended methods, has most likely added to the positive perception of change [6].

Managers often ignore the stage of exploration and disregard this as unnecessary and too time-consuming [5]. However, in this project the exploration stage was seen as essential in clarifying and communicating the strategy and to facilitate employees’ motivation for developing and adopting changes.

Strength and limitations

The strength of this study is its focus on the challenging area of implementing evidence based practice in the real world of clinical care. This is important in order to maximise the quality and effectiveness of health care services.

There are however limitations to this report. A low cost approach together with a focus on service development has been employed which has affected the amount of data, eg. a lack of comparison group, collected in this study.

Furthermore, the relatively positive response from employees may be an overestimation of actual satisfaction. Satisfaction levels are however only one factor in evaluating service improvements and there are many more facets to the overall implementation project than described in this study. These will be the focus of attention in future papers.

Conclusion

In conclusion, the initial step of implementing clinical guidelines has been achieved through involving employees in developing clinical standards as a vehicle for communication of evidence based practice. We attribute this to leadership, sufficient time spent to plan and communicate the strategy as well as involving employees in the process of creating clinical standards. Following up recommendations with a training plan and implementation of new methods has also been vital to keep up a momentum of change.

Declarations

Ethics

The project is a service evaluation project and according to Norwegian law does not require ethics approval (see link). Consent to participate in the study was ensured through the participation process which was voluntary and anonymous.

https://helseforskning.etikkom.no/reglerogrutiner/soknadsplikt/sokerikkerek?p_dim=34999&ikbLanguageCode=n

Consent for publication

Not applicable

Availability of data and material

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions:

First author, LK, has designed the study in collaboration with all other authors and written the paper. Second author, LSS, conducted the evaluation in collaboration with all other authors and participated in writing the paper. Third author, IE, analyzed the data and participated in structuring and writing of the paper.

Abbreviations

AACAP American Academy of Child and Adolescent Psychiatry

CAMHS Child and Adolescent Mental Health Service

EDI Employee-Driven Innovation

NICE National Institute for Clinical Excellence

PDSA Plan, Do, Study, and Act

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Table

Table 1. Evaluation of implementation and Clinical management. A process of developing clinical standards in a CAMHS¹. Employees (45/60) participated answering the following seven questions as follow².

	All (N=45)	Senior clinicians (N=32)	Service leads (N=13)
Mean difference	<i>p</i>		

N (SD)

N (SD)

Implementation

“The developments in CAMHS ensures that patients and cares receive a service that is accustomed to their needs”

Overall	3.8 (0.7)	3.7 (0.7)	3.9 (0.7)
0.1	0.6		

Through the development of clinical standards

	4.0 (0.8)	4.0 (0.7)	4.2 (0.8)
0.3		0.3	

The clinical standards have contributed to clarify the professional direction of CAMHS

	4.5 (0.6)	4.5 (0.6)	4.6 (0.5)
0.1	0.5		

Employees in CAMHS have been positively involved in the development of clinical standards

	4.0 (0.8)	3.8 (0.8)	4.5 (0.5)
0.6	0.001		

Management

CAMHS has a clear vision

	3.8 (0.8)	3.7 (0.8)	4.0 (0.7)
0.3		0.2	

CAMHS manages to implement aims and vision into clinical care

	3.5 (0.8)	3.4 (0.8)	3.9 (0.7)
0.5		0.07	

CAMHS is developing in the right direction

	4.0 (0.8)	3.9 (0.9)	4.3 (0.5)
0.4		0.1	

¹ CAMHS: Child and adolescent mental health service (CAMHS) consisting of seven outpatient teams, three specialized teams and three hospital wards (Haukeland university hospital).

² Agreement score: Each question had a score where 1 was “totally disagree”, 2 “disagree”, 3 “both disagree and agree”, 4 “agree”, and 5 “completely agree”.