An exploration of organizational characteristics and training adoption in Irish community drug treatment services

Abstract

Background*:* Changes in patterns of drug use and population needs necessitate the adoption of new technologies. Despite high failure rates in adopting new technologies acquired in training, little is known about the process which can support successful change. This study explores the impact that staff and service characteristics have on the process of training adoption in Irish opiate substitution therapy services, with a specific focus on the concept of organizational readiness to change.

Methods: A cross-sectional survey was conducted on a convenience sample of 132 staff members across 12 services in Ireland. The relationship between staff demographics, their perceptions of organizational readiness to change, burnout and a 4-stage process of training adoption were considered.

Results: Discipline, job tenure and educational levels are important predictors of engagement in the adoption process. Staff in services with higher institutional needs, greater pressures for change and poorer resources were less likely to be exposed to, or adopt training. Having lower levels of stress and more influence with peers was associated with better adoption of training.

Conclusions: Planners and service managers need to carefully consider the composition or dynamics of services when initiating change. Organizational readiness to change and staff characteristics as measured by instruments used in this study are important determinants of the process of innovation or training adoption and provide a good basis for developing further understanding of *how* treatment services work. This paper expands on results from previous studies conducted in the US, to a European context.

Keywords: Organizational readiness to change, dissemination, training, substance use, innovation adoption

1 Introduction

Across developed countries, where both licit and illicit drug use is common, problematic opiate users have a disproportionate social, health and economic impact (EMCDDA, 2020; Godfrey, Stewart, & Gossop, 2004). In terms of mental and physical health, homelessness and high risk of mortality, delivering effective treatment to this population of drug users is characterised by its complexity (Darker, Ho, Kelly, Whiston, & Barry, 2015; EMCDDA, 2019). An increasing age profile and a diversification in the type and potency of drugs used has compounded this complexity and placed additional demand on health services to implement new technologies in order to adopt to the changing needs of this population (Jannetto et al., 2019; Public Health England, 2016). In the last two decades, during periods of increased demand and reduced resources, treatment services have also had try to adopt to new life-saving technologies, many of which have demanded significant changes to practice. These technologies have included the provision of 'take-home' naloxone to reduce overdose deaths, new treatments for blood borne viruses, and new psycho-social treatments (McAuley, Aucott, & Matheson, 2015; Millar, 2017; O'Shea, Goff, & Armstrong, 2017). Implementing these technologies successfully often involves multi-level organizational 'buy-in' which, at a minimum, involves additional efforts from staff, and the provision of appropriate resources to support successful implementation.

Opiate substitution therapy (OST) such as methadone and buprenorphine, typically delivered in community settings in conjunction with psycho-social support, is effective, and reduces the physical, psychological, social harms and economic costs associated with problematic opiate use (Darker et al., 2015; Gossop, 2015). Despite the effectiveness of treatment, OST services face challenges which arguably are unique in healthcare provision. In relation to the structure and delivery of OST, scientific evidence regarding the efficacy of treatment has sometimes been dismissed by key decision makers in favour of ideologically or morally based objections to drug use (Duke & Thom, 2014). In this context, in order to influence public discourse and contribute to policy, it is imperative that appropriate scientific

evidence is made available, not just that specific types of treatment types work well, but *how* they work and what types of organizational structures and practices will best support their implementation.

Little scientific evidence is available in relation to what type of organizational attributes can most effectively support the implementation of new technologies, and more generally we know little about the process and dynamics of OST services (P Kelly, Hegarty, Barry, Dyer, & Horgan, 2017). This is because, research in the area of drug treatment, has traditionally been focused on categorical factors or disease states, and not on the process and dynamics of treatment. This has resulted in a dearth of knowledge, and a lack of consensus in relation to our understanding of substance misuse treatment organizations and the systems in which they operate (Glasner-Edwards & Rawson, 2010; Van de Ven, Ritter, & Roche, 2020). In this respect, little has changed since over two decades ago when Ethridge and Hubbard (2000) observed that this knowledge deficit occurred due to the multitude of variables involved and insufficient available frameworks for organising or evaluating substance misuse treatment services. These challenges, relating to drug treatment services are also reflected within healthcare research more generally, where a complete understanding of mechanisms which facilitate or inhibit the process of change or knowledge transfer has not yet been attained (Lewis et al., 2020). When an understanding of implementation strategies has been established in healthcare settings, their generalisability from context to context has not been well established (Lewis et al., 2020). What we do know is that overall failure rates for organizational change in healthcare are high at between 30%-90%, depending on how the change is measured (Jacobs et al., 2015). If we are to successfully plan and design services, then it is imperative that we gain further understanding of *how* they work and what mechanisms will support the implementation of practices.

From a service level perspective, many authors have attributed the failure of knowledge transfer to an organizations inability to establish sufficient *organizational readiness* (Rafferty, Jimmieson, & Armenakis, 2013; Vakola, Armenakis, & Oreg, 2013). These observations are reflected in work from within the field of organizational development, which is based on the *human relations* study of organizations. From within this field, *Organizational Readiness to Change* (ORC) is identified as a

key concept and an important determinant of the process of innovation adoption (Ford & Foster-Fishman, 2012). ORC is multi-faceted concept which is subject to ongoing conceptual discussion from both a theoretical and operational perspective (Attieh et al., 2013; Weiner, Amick, & Lee, 2008). However, ORC has effectively been defined as a shared psychological construct of whether staff are collectively *willing* and *able* to support innovations and change (Miake-Lye, Delevan, Ganz, Mittman, & Finley, 2020; Weiner et al., 2008). This process of change implementation is governed by an individual and organizational commitment to change and is heavily influenced by organizational dynamics (W.E. Lehman, Simpson, Knight, & Flynn, 2011). The operationalisation of ORC in healthcare practice has been varied and is often dependent on the specific context in which it is applied (Gagnon et al., 2011).

Within substance misuse services, a tool developed by Lehman and colleagues (2002) has shown promise for use in substance misuse services. This tool is shown to have a high sensitivity and construct validity, providing a good basis for its use (Gagnon et al., 2014). Further systematic reviews have demonstrated the utility of this tool (or a modified version) where it has been used effectively as a measure of change readiness and a strong predictor of innovation adoption, but also as a measure of organizational functioning relating to service user outcomes (P Kelly et al., 2017; P. Kelly, Hegarty, Barry, Dyer, & Horgan, 2018). ORC domains have been shown to relate to greater training satisfaction and a greater likelihood of implementation (W.E Lehman, Becan, Joe, Knight, & Flynn, 2012). Staff who see their programmes as having poorer resources are less likely to have exposure to training and are less likely to utilise training and where staff feel like they have more influence and growth opportunities they will utilise training more, while a good organizational climate (clearer mission, better cohesion, more autonomy, better communication and lower stress) is a significant predictor of innovation adoption (P Kelly et al., 2017). Within studies where ORC has been measured, individual staff characteristics such as job tenure and levels of education have also been identified as having a relationship with the implementation of training and evidence-based practice (Lundgren, Amodeo, et al., 2011; Lundgren, Chassler, Amodeo, D'Ippolito, & Sullivan, 2012). It is clear that, utilising ORC measurements in conjunction with other variables in practice settings, will help us to improve our

understanding of what makes some treatment services better at adopting to change, and delivering more effective treatment. Still, the mechanisms which underpin the relationships between ORC and the process of innovation adoption are poorly understood. The generalisability of studies using ORC measurements to substance misuse treatment services outside of the US is not yet fully established, and has not been explored in an Irish setting (P Kelly et al., 2017).

In Ireland, reporting and monitoring of policy, practice and treatment of problem drug use has been increasingly standardised through the European Monitoring Centre on Drugs and Drug Addiction (EMCDDA, 2019). This supports and encourages the use of evidence- based policies and practices. However, historically the evolution of substance misuse services in Ireland has also been influenced by ideological elements such as the Catholic Church, a symbiosis of public and private medicine, and a political response which over the course of several decades which has attempted to account for rapidly changing societal values (Barrington, 1987; Clancy, Kelly, & Loth, 2019). As a modern European democracy, Ireland has expressed a clear commitment to implementing evidence based policies and practices in drug treatment (Department of Health, 2017). In spite of this, Irelands rates of problem opiate use and drug related deaths are amongst the highest in Europe (EMCDDA, 2019; Health Research Board, 2019).

Training in evidence-based practices are provided in Irish OST services at a local level, and through the HSE national addiction training programme (NATP) which was founded in 2007 in order to support treatment services through the delivery of quality of training and support of robust treatment systems (Health Service Executive, 2011). However, there is limited evidence available publicly on either the current existence or activities of the NATP and historically minimal public information about the aims an objectives or effectiveness of the NATP has been made available. In addition to this, scientifically based evidence on the characteristics of services which most effectively support innovation adoption in the context of Irish OST services is not available. If we wish to base the design of services, and the delivery of training within those services on scientific evidence, then it is imperative that this evidence

is accumulated on not just *if* treatment services adopt new innovations, but *how* and *why* they do it (W.E Lehman et al., 2012).

Within the process of innovation adoption, training exposure frequently represents the first stage of a process and the individual and collective appraisal of that training, its value, and their appraisal of organizational context in which they work will influence staffs decision to implement it or not (Joe, Broome, Simpson, & Rowan-Szal, 2007). The objective of this study was to identify and understand relationships and between ORC, staff characteristics, and the process of innovation adoption in Irish community-based OST services. This study sought to measure an individual's exposure to and conceptualisation of training, how it might have influenced their knowledge and beliefs, and their appraisal of individual and organizational efficacy with regard to implementation. These are all factors which are considered to be important in sustained adoption (Damschroder et al., 2009). The relationships between staff characteristics, such as levels of education, job tenure and professional background were also examined in relation to the process of innovation adoption.

A 4-stage interdependent process of innovation adoption; (i) training (e.g. exposure to new innovations), (ii) adoption of the new practice (representing a decision taken to adopt and/or to take action to adopt), (iii) implementation (sustained support for the change effort), and finally (iv) practice where the change becomes sustained in practice. This process, first proposed by Simpson (2002) and later refined by W.E. Lehman et al. (2011) provides a broad conceptual basis for this study. This study contributed to the literature on implementation research by examining the organizational determinants of innovation adoption and exploring the mechanisms which underpin them. Currently, these phenomena are not well understood and little is known about these in the Irish context (Lewis et al., 2020).

2 Research Design and Methodology

This quantitative study utilised a cross-sectional survey design which has been identified as a suitable approach for evaluating services (Das-Munshi, Ford, Hotopf, Prince, & Stewart, 2020). Data for this

study comes from a convenience sample of staff who work in 'tier-3' community-based OST services in the Republic of Ireland. While there is no standard 'model' for OST services in Ireland, and data on the composition of the workforce is not available, these are typically staffed by multi-disciplinary teams which included, general assistants, therapists, nurses, project workers, and medical staff including specialist addiction psychiatrists, and with the dominant model of prescribing in Ireland being centred around general practitioners or GP's. For this study, OST services were considered as separate entities when they operated from different buildings only. Staff who were over 18, had direct contact with service users and had worked or volunteered in individual OST services for more than 14 hours a week for a period no less than one month were considered eligible for the study. Services were selected at random, firstly service managers were contacted directly, and in all cases the researcher emailed the service teams and met with them in person, prior to commencing data collection. Participants were then recruited in person by one researcher in their places of work and completed a written questionnaire. Data was collected between June 2019 and February 2020.

2.1 Study Instruments

A modified version of the Survey of Organizational Functioning (SOF) developed by Broome, Flynn, Knight, and Simpson (2007) which is a superset of the ORC questionnaire developed by W.E. Lehman et al. (2002) was used for this study. The Organizational Readiness to Change (ORC) questionnaire includes 4 domains; Motivation for change [change drivers] (MFC), institutional resources (IR), staff attributes (SA) and organizational climate (OC) which incorporate a total of 18 subdomains (see Figure 1). The SOF instrument includes additional sub-domains on job attitudes, leadership, workplace practices, and training exposure and utilization. In order to meet the objectives of this study, only the SOF measures on training exposure and utilization was incorporated into the staff questionnaire. In addition to this, one SOF subscale (on burnout) from the workplace practices domain was also included, as previous studies have shown this to have an important relationship with innovation adoption (W.E Lehman et al., 2012).

The sub-domains utilized in the training domains measure previous training experiences and utilization of training from both an individual and organizational perspective. These measures incorporate 14 items incorporating a total of four subscales: (i) training exposure (frequency of internal/external training opportunities) (ii) training satisfaction (with training and opportunities to train) (iii) individual training utilization (decision to use training, integration into practice, service user responsiveness to new techniques) (iv) service wide training utilization (management support for training, decision to implement, service level adoption). These scales have been shown to have reliable psychometric properties (Joe et al., 2007; W.E. Lehman, Greener, Rowan-Szal, & Flynn, 2012). Demographic data about participants' background and service characteristics were also included. There were a total of 121 items, 107 of which used Likert scale (1-5) responses [1=disagree strongly, 2=disagree, 3= uncertain, 4= agree, 5= strongly agree]. Ten items on the training subscales also used (1-5) Likert responses with a 5-point response format [1=never, 2= rarely,3=sometimes, 4= a lot, 5= almost always], with five items on training exposure using the 5-point response format; [none, 1 time, 2 times, 3 times, 4 or more]. When computing the scale [sub-domain] scores, items on the scale were averaged and multiplied by ten, meaning the possible range of scores was from 10 to 50. This process was used where over half of the number of items within a sub-domain were completed, otherwise the sub-domain was excluded (W.E. Lehman et al., 2002). In the Motivation for change domain (Figure 1) scales for training needs and programme needs indicate the need for greater training resources or improvements to specific aspects of the programme. Higher scores in these areas reflect *negatively* on a service. Similarly, *higher* ratings on the stress and burnout scales indicate that there is *higher* stress and burnout in a service. In all the remaining sub-domains, higher staff ratings reflect *positively* on a service, for example high scores on training scales indicate that staff perceive training to be a priority in their respective services. Prior to full implementation, this tool was subject to minor modifications which included a change of spelling from American to British English and minor changes to the wording of questions to suit the Irish context. For example, the word 'program' was changed to 'service' and 'counsellor' was changed to 'keyworker'. This was then reviewed 8 subject experts, and a pilot study was conducted (n=4) (Hertzog, 2008).

INSERT FIGURE 1 HERE

2.2 Ethical issues

The study was approved by two ethics committees in Ireland. Written permission to access services was also obtained from the Health Service Executive (HSE) Clinical Ethics committee, the head of research for The HSE and managers of individual services. In most services, the researcher attended a staff meeting and emailed all staff details about the study several weeks prior to commencing data collection. The services were then visited on a pre-arranged date and the researcher spent an average of 2-3 days at each site. Participants were provided information verbally about the study prior to taking part, they were informed that their participation was voluntary, and they were given the opportunity to ask any questions about the study. As the survey was anonymous, consent was implied through participation and individual centres were identified only using a code. The surveys took 20-25 mins to complete and once they were completed, surveys were returned to the researcher in a sealed envelope.

2.3 Data Analysis

Data generated from the survey was entered directly into IBM SPSS statistics (Version 26.0, IBM Corp, Armonk, NY, USA) and then exported into Stata (Version 15.1, Statacorp LP, College Station, TX, USA) where statistical analysis was performed. For the ORC, burnout and training scales, Cronbach's alpha coefficient and the mean inter-item correlation coefficient were used to evaluate the internal consistency of the subdomains. An alpha value of >0.7 (Bland & Altman, 1997) and a mean inter-item correlation between 0.15 and 0.50 (Clark & Watson, 2016) were considered acceptable. Continuous variables were described using mean and standard deviation (SD) and categorical variables were described using frequency and percentage. Univariable and multivariable mixed-effects linear regression models with OST service as the random effect were used to investigate organizational and staff factors associated with training exposure, satisfaction and individual and service wide utilisation. The multivariable models were built in three stages: (1) Model 1: staff demographic variables; (2) Model 2: ORC and burnout variables and (3) Model 3 (final model, presented as multivariate results):

variables with a p-value <0.25 in Models 1-2 were included. Prior to performing the multivariable analysis, multicollinearity among the independent variables was tested using the variance inflation factor (VIF). All available data was used in the univariable analyses while the multivariable analysis was restricted to respondents with complete information (i.e. data on all independent and dependent variables investigated in the study). All tests were two-sided and a p-value of <0.05 was considered to be statistically significant.

3 Results

3.1 Demographics and Professional Characteristics

The twelve OST services sampled served a mixture of rural and urban populations and were staffed by multi-disciplinary teams. Table 1 provides and overview of the respondent's characteristics. Respondent's (n=132) were almost evenly split between females (50.8%) and males (48.5%) with one person identifying as other (0.8%) and a mean age of 46.8 years (SD 11.0). Professional backgrounds were varied with project workers/general assistants (30.5%) being in the majority, followed by counsellor/psychotherapists (19.9%), nursing (17.6%), medical (16.8%), administration (8.4%) and professional other which included pharmacists, social workers and psychologists (6.9%). In order to account for limited numbers in some professional groups and to facilitate analysis, the following professions were grouped together; Psychiatrists and GP's as *Medical;* Social Workers, Pharmacists and Psychologists as *Other Professional;* Addiction Counsellor and Other Counsellor as *Counsellor Psychotherapist;* Nurse and Specialist Nurse as *Nursing;* Project Worker and Other (where other was specified as a General Assistant) were specified as *Project Worker/General Assistant;* and Administration remained unchanged. Most participants (70.8%) worked in the field for over 5 years, and over half (59.4%) were in their current role for over 5 years. Apart from medical staff who ran clinics to which individuals were generally assigned, staff surveyed were generally not assigned to a specific caseload of service users and the majority (59.2%) worked directly with 40 or more service users. The majority of the sample (85.3%) was educated from degree level and above, with those having school qualifications only (13.2%) or no school qualifications (1.6%) being in the minority. Ethnically,

the sample group was largely homogenous with a large majority being White Irish (n=118), followed by other white background (n=7) with the remainder being Asian (n=3), Black African (n=1), Asian Chinese (n=1) and other (n=1).

INSERT TABLE 1 HERE

Table 2 provides an overview of ORC, burnout and training scale sub-domains with Cronbach's-alpha, mean inter-item correlation, mean scores (range 0-50) and standard deviations. It was evident that the e-communication and office resources subdomains did not have acceptable reliability. This may have occurred as some items in the Institutional Resources domain related to group counselling and not all of the services surveyed facilitated group counselling. Similarly, some staff groups, such as project workers/general assistants may not have had direct access to the internet at work.

INSERT TABLE 2 HERE

3.2 Results; process of training adoption

The results of the univariable and multivariable analyses investigating organizational and staff factors associated with training exposure, satisfaction and utilisation are presented in Tables 3-6. Summaries of the multivariable results only are presented in Tables 6 and 7 while the 3-stage modelling for multivariate analysis is presented in tables 7-10 (Appendix 1). Years of experience working in substance misuse and the communication sub-domain were excluded from all multivariable analyses due to multicollinearity. Years' experience working in substance misuse was highly correlated with years in current job and the communication sub-domain was highly correlated with the change sub-domain. Due to this, only the variables years in current job and change were investigated in the multivariable analysis. For consistency, all multivariable analysis was restricted to the n=102 who completed information on all independent and dependent variables investigated.

Table 3 summarises the results for training exposure. Staff with the lowest level of education (secondary school or lower) had significantly lower training scores than staff with a degree or equivalent (p=0.027) or staff with a Masters/PhD (p=0.005). Project workers/General assistants had significantly lower training scores than all other disciplines except for administration staff. Administration staff had significantly lower training scores than counsellor/psychotherapists (p=0.026). In the univariable analysis fourteen out of eighteen subdomains were associated with training exposure. Six out of six subdomains in organizational climate were associated with training exposure, followed by institutional resources with four out of five, staff attributes with three out of four and motivation for change with one out of three. Highest level of education (p=0.018) and Discipline/Profession (p<0.001) were the staff demographics associated with training exposure. In the multivariable analysis, two of the ORC sub-domains training resources (p=0.001) and growth (p=0.001) remained statistically significant. In services where staff perceived there to be better training resources (p=0.001) and more opportunities for growth (p=0.001) they also perceived that there was greater training exposure. Discipline/Profession (p=0.029) also remained statistically significant. Project worker/general assistants were less likely to be exposed to training than counsellor/psychotherapists (p=0.009), other professionals (p=0.029) and nurses (p=0.026). Years in current job (p=0.039) became significant in the multivariable analysis. Overall, longer job tenure was associated with greater training exposure, with those in post over five years having greater exposure than those in post five years or less.

INSERT TABLE 3 HERE

Table 4 provided and overview of the univariable and multivariable linear regression analysis investigating organizational factors associated with training satisfaction. No staff characteristics were associated with training satisfaction in either sets of analysis. In the univariable analysis, thirteen out of eighteen subdomains were associated with training exposure. Six of the subdomains in organizational climate were associated with training satisfaction, five in institutional resources and three in staff attributes, with no sub-domains in the motivation for change domain showing any association. Burnout (p=0.002) had a negative association with training satisfaction. In the multivariable analysis three

subdomains were statistically significant. Two of the institutional resources subdomains, training resources (p=0.001) and computer access (p=0.007) showed significance. In organizations where staff perceived that there was better training resources and better computer access, they also reported higher satisfaction with training. In the efficacy subdomain staff are asked to rate their skill levels, organizational ability and confidence. Staff who appraised themselves more favourably in this regard (p=0.040). reported that they were less satisfied with the training that they received. This is a finding which is worthy of further investigation.

INSERT TABLE 4 HERE

Table 5 summarises the univariable and multivariable linear regression analysis that investigated which organizational factors were associated with an individual's decision to adopt techniques learned in training into their own practice. In the univariable analysis, twelve out of eighteen ORC subdomains were associated with individual adoption, with staff attributes having four out of four domains, institutional resources four out of five, organizational climate four out of six, and with no subdomains from the motivation for change domain reaching statistical significance. Staff who were educated at secondary level or lower were less likely to utilise training than staff with a degree or equivalent (p=0.021) or staff with a masters (p=0.007). Counsellor psychotherapists reported higher training utilisation when compared to project workers/general assistants (p=0.001), medical staff (p=0.050) and nursing staff (p=0.019). Medical staff had higher training utilisation when compared to project worker/general assistants (p=0.049). Burnout was negatively associated with individual adoption (p=0.016), where staff who reported higher levels of burnout also reported a lower likelihood of adopting new techniques following training. In the multivariable analysis, five of the eighteen ORC subdomains were statistically significant. In the motivation for change domain, staff who rated their programmes as having greater pressures for change reported lower training utilisation (p=0.036). In the institutional resources domain, two sub-domains were significant, with those rating staff resources (p=0.005) and access to e-communication (p=0.005) more highly, reporting greater individual training utilisation. Where staff who perceived having more opportunities for growth (p=0.001) and greater

influence (p=0.001) they reported being more likely to adopt training into practice. Finally, an unexpected result was that those who saw their services as having clearer mission goals, also reported that they were least likely to adopt new practices learned in training (p=0.049).

INSERT TABLE 5 HERE

Table 6 summarises the results for training utilisation at the service level. In the univariable analysis fourteen out of eighteen ORC subdomains were associated with programme wide adoption of new training techniques. In organizational climate six out of six domains were significant, three out of four in staff attributes, three out of five in institutional resources and programmes with greater identified training needs and programme needs in the motivation for change domain being seeing as less capable of adopting new techniques. Staff with lower levels of education (secondary or lower) reported lower levels of training utilisation at service level than staff with a degree (p=0.004) or masters/PhD (p=0.557). Project workers/general assistants reported significantly lower training utilisation at the service level than counsellor/psychotherapists (p=0.002), medical staff (p=0.018) and nursing staff (p=0.012). In the multivariable analysis 4 out of 18 ORC domains were statistically significant. In the motivation for change domain, programmes with high programme needs (p=0.019) were negatively associated with service wide adoption. In the staff attributes domain, having greater influence (p=0.001) and lower stress (p=0.003) related greater service wide adoption of training. Where staff reported greater team cohesion in the organizational climate domain, they reported lower service level adoption (p=0.001). This result is unexpected and may have occurred if staff perceived a team as being their immediate co-workers, as opposed to the wider organization.

INSERT TABLE 6 HERE

5 Discussion

The objectives of this study were to examine staff and organizational factors which relate to the process of training adoption in Irish community-based OST services. Accepting for some low alpha values which require further investigation, this study provides further confirmation of the utility of ORC measurements outside of the U.S. context (Rampazzo, De Angeli, Serpelloni, Simpson, & Flynn, 2006). ORC tools developed at the TCU https://ibr.tcu.edu/forms/organizational-staff-assessments/ have been used in at least 20 papers but heterogeneity in study designs complicates the cross comparison of results. Additionally, exactly how to address ORC deficits once they have been identified is still not clear (P Kelly et al., 2017; P. Kelly et al., 2018). A method of providing baseline measurements on ORC results directly to services and staff with a view to stimulating organizational improvement provides some promise in this regards (Courtney, Joe, Rowan-Szal, & Simpson, 2007).

5.1 Staff Characteristics associated with the process of training adoption

Certain staff characteristics were associated with the process of training adoption. Staff from specific professional groups who are more highly educated and longer in post, were more likely to be exposed to training on a regular basis. This may be partly attributed to the mandatory requirements for continuous professional development for certain professional groups, but these factors were not the only determinants of training utilisation. Staff with higher levels of education were more likely to make a decision to adopt new practices, a finding which is consistent with other studies (Lundgren, Krull, de Saxe Zerden, & McCarty, 2011). Certain staff disciplines, such as counsellors, reported that they were more likely to adopt new practices and also reported greater service wide adoption. One possible explanation for this may be that within Irish OST services, counsellor/therapists have regular supervision built into their conditions of employment. This is a practice which has been shown to directly benefit the implementation of learning, as well as employee wellbeing and reduce burnout (O'Connor, Neff, & Pitman, 2018; Wheeler & Richards, 2007). Staff reporting higher levels of burnout, were also less likely to be satisfied with training that they experienced and less likely to make the decision to adopt training into practice, while those reporting higher stress levels identified lower

service level adoption of training. All participants in this study had direct contact with service users, and the implications of these differences between staff groups, such as lower levels of training exposure and utilisation amongst frontline staff such as administration, project workers and general assistants on the consistency of service delivery, are worthy of consideration.

5.2 ORC domains and subdomains associated with the process of training adoption

Staff attributes within the ORC subscales, such as having greater opportunities for growth and having greater influence with peers, were also important factors within the adoption process. These findings are generally consistent with studies conducted in the United States treatment services, where staff who saw themselves as having greater influence with their peers and having more professional growth opportunities were also more likely to support evidence-based practice (Courtney et al., 2007; Lundgren, Amodeo, Chassler, Krull, & Sullivan, 2013). This finding is also consistent with studies conducted in private and public sector environments where employee empowerment has been shown to relate to greater employee commitment, performance, and willingness to innovate (Fernandez & Moldogaziev, 2013). Within substance misuse services, training adoption may not the only benefit of staff empowerment, as services where there are more staff who saw themselves as having greater influence are also more effective at developing better relationships with service users (Greener, Joe, Simpson, Rowan-Szal, & Lehman, 2007). Feeling influential has also been shown to have negative implications. Staff who are longer in post and who see themselves as having greater influence have also been shown to make more personal modifications to evidence-based practices (Lundgren et al., 2013). Overall, the impact of having more opinion leaders and finding ways to engage and empower staff who do not feel influential is an important consideration for planners and change agents. Another finding from this study which may have implications relating to for training type or design, is that staff who rated themselves as having greater efficacy, i.e. better skillsets, reported that they had lower training satisfaction overall.

Training was less likely to be adopted into practice in services with higher pressures for change and greater service needs, confirming the relationship between programme deficits and a services ability to adopt new ideas. Unsurprisingly, providing greater training resources means that staff will have higher training exposure and greater satisfaction with training. As training is increasingly accessed remotely and online, having greater access to computers and e-communications is important in terms of increasing frequency of access to and variability of training known as e-learning (Sinclair, Kable, Levett-Jones, & Booth, 2016). While there is a known variability in respect of the impact of e-learning on behaviour change in healthcare subject to factors such as the type of training being delivered, its efficacy is well established (Rohwer, Motaze, Rehfuess, & Young, 2017; Sinclair et al., 2016). For this study, staff reporting great computer access reported high levels of satisfaction with training while greater use of and access to e-communication was strongly related to an individual decision to adopt training. These findings are also consistent with those from other studies which use the ORC tool (W.E Lehman et al., 2012; Simpson & Flynn, 2007). Staffing was another resource which was shown to have a relationship with an individual's decision to adopt training into practice. While the relationship between staffing levels and implementation within healthcare is known (Li, Jeffs, Barwick, & Stevens, 2018) this finding provides further insight into the mechanisms which may be involved in this relationship, something about which little is known. Two unexpected results emerged from this study. One was that in services where staff reported higher levels of cohesion, lower levels of service wide adoption of training was reported. One possible explanation for this is that different teams may work cohesively but in 'silos' or as separate entities within the same organizations. The reasons why staff reporting greater mission clarity in their services and lower levels of individual training adoption are not clear.

6 Limitations

Although a three-stage modelling process was utilised in order to mitigate the challenges in conducting multivariable analysis with a relatively small sample size and a large number of variables, caution is recommended in making extrapolations from these results for this reason. Sample size and differences

between the sizes of samples from each service also restricted opportunities for cross comparison of services. The staff participants also represent a convenience sample and non-response or self-selection may have been affected by workloads or staff characteristics, in addition to this measures of training adoption were self-reported. As this is an exploratory cross-sectional study it cannot be used as a basis to identify causal relationships between the selected variables. Other studies using ORC measurements have shown that service aspects such as service; location, size, affiliation to a university or a more detailed analysis staff characteristics have shown an impact on service functionality and training adoption (Crits-Christoph et al., 2011; W.E Lehman et al., 2012). Assessing all these variables was limited given the small population of staff working in Irish addictions services and the requisite to maintain the anonymity of services involved in this study.

7 Conclusion

Based on the findings in this study, we can conclude that that both staff and organizational characteristics are predictive of the success of training adoption in community OST services in Ireland. Providing training alone is important but it is not sufficient in itself to ensure that training will be adopted into practice. In the context of high rates of failure to adopt to change in healthcare, it is imperative that staff attributes and staff perceptions of how their organizations work are considered. Disparities between staff and the impact of skill mix and staff assessment of their own skillsets on training adoption are worthy of further exploration, but also should be considered when recruiting new staff. Funders must not only provide sufficient resources for services, but the right *type* of resources. Yet, providing additional resources alone is not sufficient, and identifying ways to empower staff and make them feel more influential in their workplaces will facilitate the process of training adoption and is likely to involve other benefits for services. Overall, organizational characteristics should be carefully considered when planning services or prior to change implementation and the ORC tool developed by Lehman and colleagues (2002) provides a good basis on which to do this. This study, and other studies using these ORC measurements in substance misuse services, provide a good basis for further

longitudinal, quasi-experimental or mixed methods research in substance misuse treatment services. These will help to enhance our knowledge of *how* services work.

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