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The science of recovery capital: Where do we go from here?

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Running head: The future of recovery capital science

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ABSTRACT

Background: The concept of Recovery Capital (RC) has emerged in studies and discussions of the addiction recovery process, and as a potential metric and marker for recovery gains. Although conceptual and applied development of the concept in the 20 years since the term was coined has increased, there remains insufficient clarity of key domains, factors and best practice research and applications for populations experiencing addiction. We aimed to review progress around the conceptualisation and operationalisation of RC and to consider future directions for a science of recovery capital.

Method: We provided a brief overview of theoretical foundations and advances, empirical measurement, and application in treatment and continuing care settings. We next introduced four primary areas for addiction science to address, namely: (i) conceptual development (e.g., how RC domains are unique but interrelated entities, valence of RC), (ii) empirical testing, adequacy of measurement and analysis, (iii) directions for novel application in treatment and recovery settings, and (iv) dissemination and communication to policy, practice, and lived experience groups. In this review we also focussed on some of the challenges that must be addressed for a science of RC which could produce long-term impact in treatment and policy.

Results: Despite burgeoning empirical work on RC, its application and translation has been unsystematic. The field currently relies on self-report questionnaires for the development of the theory and quantification of RC. Thus, there is an urgent need for rigorous and systematic conceptual and empirical development of RC.

Conclusions: A formal collaboration between scholars, practitioners and experts by experience worldwide would move Recovery Capital forward in an empirically-driven and culturally appropriate manner, as would testing its applicability at individual, organisational and societal levels.

Keywords*:* Continuity of care; Evaluation; Measurement; Recovery; Recovery capital; Strengths-based approaches

OVERVIEW AND RATIONALE

In recent years, largely as a result of the work of a small group of US and UK academics and thought leaders (William White, John Kelly, Keith Humphreys, Michael Dennis, James McKay and others), addiction recovery research has been transformed from small-scale retrospective studies, largely focused on 12-step mutual aid groups, to a respected and replicable body of work involving multiple methodologies, and increasingly powerful research designs and procedures. There is still considerable work to do, particularly in non-Anglophone countries, around sub-populations and cultures, and with individuals of varying clinical diagnoses, but there is a clear trajectory and a growing, vibrant and inclusive research community addressing addiction recovery.

A central term that has gained increasing acceptance in studies and discussions of the recovery process, is Recovery Capital, referred to hereafter as RC. The research base around RC is significantly more limited as demonstrated in the literature review conducted by Hennessy (1). It is now over 20 years since the term was initially coined by Robert Granfield and William Cloud (2); yet, there is a lack of systematic attention to conceptual and applied development of the concept. Our aim in this article is to review progress to date and to consider necessary future directions for a science of RC and possible areas of growth and development for conceptual and empirical testing.

Given the enthusiasm worldwide for introducing RC into research, practice, and policy, this is particularly timely as the concept has thus far been translated into measurement tools that are reliant on self-report and that have had relatively limited application. Thus, we provide an overview of how that development has occurred, what gaps exist, and the primary challenges to operationalise and implement a concept whose origins are diverse and where there is a risk of policy and practice leaving epistemological and ontological debates in its wake.

REVIEW OF THE CONCEPTUAL AND EMPIRICAL WORK TO DATE

Theoretical Foundations

RC is based on an ecological model referring to all the internal and external resources which a person can access in support of their recovery process (2–5). Recently, RC has been defined as the "resources and capacities that enable growth and human flourishing" (6), an asset-based definition that focuses on an individual's strengths. In general, RC research and models address individual-level factors (oftentimes labelled 'personal RC' or 'human and financial RC'), inter-individual-level factors ('social RC'), and the larger environmental context ('community RC').

A discussion of RC would not be complete without briefly describing its origins in addiction recovery.[1] Addiction has been framed as a chronic, debilitating disease, with

[1] Although a full treatment of the history of addiction recovery and its definitions cannot be included here, the reader is referred to several manuscripts that do so (7–10).

remission or recovery used to describe one's healing from it. There has been much debate about the use of the term recovery for research, practice, and policy, and there seems to be a continuum of definitions, some of which include abstinence and/or sobriety from substances and others which focus more broadly on life functioning and well-being (11–14). Our intent with this paper is to focus on the more narrowly defined concept of RC, a model which can be applied regardless of one's definition of addiction recovery. We do, however, situate our discussion based on the broader concept of recovery, while acknowledging that some scholars (15,16) criticize the recovery narrative and resulting policy discourse as it often either ignores the understanding of drug use as a social phenomenon or construes individuals experiencing addiction as passive and (only) vulnerable (17). One area where RC can address this critique is in its call to meet an individual where they are at within their larger contextual environment, and so build capacity by incorporating specialist services (e.g., medication-assisted treatment) and crafting policies to support those services. This is a contribution that acknowledges the social determinants of health and how they may influence substance use and the recovery process as well as combats some of the critiques that recovery often faces.

Scholars using RC have proposed various dimensions and structures (1), but most agree on several key features: (i) there are internal and external dimensions and factors, such as those held by an individual (motivation for recovery) and resulting from interactions with others (friendships supportive of recovery) and the larger system (community-based organizations offering recovery services and other community resources including churches, colleges and housing facilities); (ii) this is a strengths-based approach which focuses on the generation of resources and capacities, towards initiating or sustaining recovery; (iii) the different aspects of RC work together and possibly synergistically to support recovery; (iv) RC is dynamic, similar to the recovery process, and changes over time and according to circumstances and conditions; (v) individuals have different amounts of RC and this influences how their recovery process progresses. Finally, although RC was originally developed based on a study of adults who recovered from substance use without attending formal treatment (2), it has since been operationalised and quantified in research for use with other populations engaged with specialist treatment services including individuals with comorbid mental health conditions (18), gambling disorder (19,20), war veterans (21), those charged with sexual offences (22,23), and youth and emerging adults (24–26).

Empirical Measurement

RC offers the potential for an empirically testable science of recovery, one that flips the traditions of addiction science from measuring pathologies to measuring strengths and capabilities. Indeed, one primary benefit of the concept of RC is as the foundation for measurement and the resulting capacity to test key theories and hypotheses about RC empirically, in a way that the much broader concept of recovery has yet to achieve. Thus, we argue that it is possible to operationalise, refine, and measure the narrower concept of RC, a revision that can then be used to help shape the broader debate and research agenda

around addiction recovery. That is, if we can achieve consensus on a narrow set of indicators and test their predictive potential, this will inform the much larger and more ambitious process of capturing and measuring recovery pathways and trajectories.

Six tools have been developed to measure RC. To date the most widely used are the 50-item Assessment of Recovery Capital (ARC; (27)) and its briefer (10-item) version (BARC;(28)), both of which have been used in a range of recovery support settings and across different populations. Scales have also been developed by Burns and Marks (29) and Sterling and colleagues (30). There are a number of clear limitations with, for instance the ARC, as outlined by Bowen and colleauges (31), but it offers a starting point for empirical testing and concept refinement. As the previous scales primarily assess aspects of human and social RC, the REC-CAP (32) was recently developed, a tool built on the ARC and several other recovery-oriented measures to create a strengths-based model for recovery care planning and community engagement. At present there is only pilot evidence on its implementation effectiveness, but it does provide a foundation for this transition in mapping and measuring.

Application in Treatment and Continuing Care Settings

As recovery can last several years post-acute treatment (33), metrics that measure ongoing growth and community integration are needed. Indeed, one of the major challenges for residential rehabilitation services, recovery residences and community recovery services (e.g., Recovery Community Organisations, RCO) is that they frequently will not fare well on standard outcome indicators. That is, because many of their clients will already have detoxed and overcome their acute problems with substance use, risk, offending and housing, there is a limiting 'ceiling effect' on the reduction of pathology relative to medication assisted treatments, intensive outpatient, and other acute clinical services.

In this regard, the assessment of RC allows for regular monitoring of strengths and emerging capabilities that are associated with improvements in wellbeing and quality of life. This has the positive psychological benefit of generating trust through discussing growth and wellbeing rather than pathology and illness, and challenging stigma by building on personal and social capabilities. It also supports recovery service provision and individual self-monitoring by creating a framework for recovery planning

Summary of the State of Recovery Capital Literature

In the 20+ years since the first use of the term, scholars studying aspects of RC have used qualitative and quantitative research with a variety of populations. There has been a more recent focus on standardizing RC measurement and this research has generaged a number of empirical hypotheses to test. Yet, despite the growing body of research and clinical practice using RC as a measurement tool and a conceptual frame for recovery-oriented interventions, there are still some major gaps in our ability to operationalise RC

concepts, based on a consensual set of assumptions and definitions, and thus to develop adequate instruments for research and practice. Indeed, at the time of the writing of the first systematic literature review of RC several gaps in knowledge were identified (1), and despite over 50 empirical manuscripts (Google Scholar search, October, 25, 2020) referencing that review, many of those questions remain unanswered still today.

RECOVERY CAPITAL KNOWLEDGE GAPS

The gaps in our understanding of RC span theory, research and practice. They include (i) conceptual development, (ii) empirical testing, adequacy of measurement and analysis, (iii), application in treatment and recovery settings, and (iv) dissemination and communication to policy, practice, and lived experience groups: Table 1 provides some key questions to be addressed in each of these areas. Effective application of RC will depend on both adequate and critical empirical testing and the resulting re-working of core concepts as part of an ongoing cycle, that will require repeated review and synthesis of the kind attempted here.

Conceptual Development

One major issue requiring further conceptual development is the lack of clarity on how RC domains are distinct but interrelated entities. Authors have noted the difficulty in disentangling whether a resource (or barrier) is a result of structural or community-level factors or more individual processes (34) and how these may play out across time. For example, engagement in sports may lead to improvements across many domains at varying paces. That is, sports engagement could lead to developing personal RC (through wellbeing, fitness, self-esteem (35)), social RC through new friendship networks, and community RC through active engagement with resources in the community (leisure centres, community groups). In these situations, there is a lack of understanding of how to capture these differential influences, i.e., how each contributes in part to the whole of developing RC.

In addition to some ambiguity about how best to separate the RC domains to understand them as entities in the real world and as things that can be reliably measured, we lack a common understanding of the key factors within a domain that best indicate the presence of RC (24,36–40) and whether/how these vary by population. For example, although employment is one component of human RC for adults (40,41), it is likely not yet important for youth populations in recovery for whom school engagement would be more relevant. Similarly, research with rural populations has demonstrated that some of the typical financial and community RC are absent and so addressing these may be especially difficult to overcome in remote settings (34,40). Spirituality and religion have also been suggested as key forms of human RC (36), but their importance may vary by culture and they may not be considered important resources by everyone in recovery. In other words, the examples provided are potentially beneficial resources, but their impact will depend on their utilisation and actualisation by the individual. As well, some scholars posit the need to carefully consider how capital is framed and whether or not it reflects true resources for

those in the recovery experience or rather if it aligns with the broader societal norms in its expectation of normalcy (e.g., work and the neoliberal labor market (42); (43)). One possible solution is the development of a modular approach in which there are common (universal) domains but that there are modular factors for specific populations. This will require repeated testing with multiple groups and a mixed-methods longitudinal approach that assesses both predictive validity and the congruence of predictors to domains – i.e., matching up personal, social and community RC outcomes by different recovery groups and populations.

There has also been confusion about the appropriate place for the concept of cultural RC: it is cited in some literature as a separate domain (5), but we classify it here in line with later conceptualizations (44) as part of community RC. Thus, cultural RC can be referred to as the resources available to engage with a recovery-oriented culture (e.g., such as a strong presence of self-help groups or sober cafes), and with non-recovery resources in the local community. While a recovery-oriented identity is a strong predictor of recovery maintenance, some individuals may not wish to align their identity with recovery-oriented groups; for example, individuals who feel they cannot relate to the recovery culture or remain in recovery for life (45–47). Thus, with this conceptualization, community RC refers not only to recovery-specific resources, but also to factors such as access to information, to college courses or other training opportunities, to safe houses and to employment opportunities.

Scholars also disagree on the valence of RC. Some have conceptualized it as solely positive (resource-driven) and thus on a summative scale while Cloud and Granfield (5) and others, suggest a continuum with the presence of negative RC. From a purely etymological perspective, “recovery barriers” rather than “negative recovery capital” would be a more appropriate term to use; capital according to the Oxford Dictionary is defined as “wealth in the form of money or other assets owned by a person or organization”. This distinction then results in differences in how RC and its barriers are measured and analysed. Another challenge is in differentiating pathologies (e.g., comorbid mental health diagnoses) from barriers (such as substance-using friends) and there remains insufficient research in this area, or analysis of the temporal relationship between alleviation of pathology symptoms and the accrual of RC.

Empirical Testing, Adequacy of Measurement and Analysis

As noted in our overview of RC literature, there are several validated tools to capture RC among individuals (27–30). The more recent addition of the REC-CAP (32) addresses some of the issues around clinical application but has yet to provide evidence of predictive validity. This creates a challenge of testing concepts and refining instruments at the same time as using these instruments with recovery groups to support their journey. Yet, we argue that this application will help to (1) raise awareness and engagement with strengths-based models, (2) improve and refine tools and measures, and (3) refine the conceptual

frame (including its unitary or multi-dimensional structure) based on empirical data collected from multiple settings and contexts.

There remain many gaps in the type of research questions addressed, especially those from a longitudinal perspective. For example, individuals in recovery often demonstrate differences in their RC and barriers by the particular stage of recovery they are in (34), but there are very few studies that explore and compare this dynamic. As well, returning to the issue of the range of RC; if only considered as recovery resources, the existing scales have demonstrated positive changes over time that are associated with growth in recovery wellbeing and completion of treatment (48). Further examinations of how individual domains of RC, overall RC, and barriers change over time is necessary to understand the mechanisms of the process. However, this is a fundamentally empirical question that can be resolved with adequate longitudinal data resulting in sufficient synthesis and model revision.

Scoring RC measures remains an issue because current scales assume all RC should be equally weighted and that a summative score best represents the combination of resources held by an individual. Yet, it seems likely that some RC is more important to have than other forms of RC; that is, some RC is likely more important because it provides the link to greater resources or stability important to the person. For example, having received higher education, such as a college degree, may be more important to some individuals in building more RC than having a recovery-supportive family; a college degree can lead to employment, stable income, and stable housing while individuals who lack a recovery-supportive family may find social support in other aspects of their lives. As well, having some forms of RC may not necessarily mean access to other forms of RC. That is, having enough money to afford treatment is only as good as the treatment that is available, assuming there is space in the treatment center. Scales are not yet able to address the synergistic ways that RC domains are intertwined. For example, qualitative interview data suggests that both social and community RC can produce financial RC for individuals with a criminal justice history (39). In these interviews, the participants described how their case manager provided the necessary linkages to housing, transportation, and benefits as a result of their role. Participants also noted that the case manager would actively coach them on how to answer questions to be successful in their housing or job applications. These are resources and changes that are difficult to capture on a single survey measure at a single point in time. Thus, further qualitative research with specific populations seems necessary to delineate potential ranking or weighting of RC factors, as well as to disentangle how changes in some domains of RC may lead to changes in other domains. We can then build further conceptual frames and hypotheses which should be refined based on longitudinal and multi-method testing.

Application in Treatment and Recovery Settings

As a strengths-based approach, RC focuses more broadly on the capacities and resources that contribute to the health and well-being of the individual in context. From this perspective, identifying strengths to use towards recovery, creating natural linkages to available supports, and addressing gaps in supports becomes the service team's primary objective (49).

The RC model makes no assumptions about abstinence and so is likely to be especially relevant for two populations in treatment, the first of those being medication maintenance approaches for opiate disorders. The RC definition presented earlier focuses on resources and capacities, and not on end points or goals, and so has equal applicability to abstinence and maintenance groups and services. Assuming that the individual in medication treatment for opioid use is stable and not at an acute risk, then there is significant benefit to measuring their wellbeing, quality of life and aspirations, as a marker of development and growth. To this extent, RC is about the tools or mechanisms that create the conditions for growth, not the growth itself. This is what differentiates RC discussions from those of the wider concept of recovery, however closely the two are linked.

The second population is for those in residential treatment. A similar rationale applies as with the medication treatment population: once acute harms have been addressed, progress is most likely to be evidenced in growing strengths such as increased quality of life and self-esteem (human RC), positive social networks (social RC) and improvements in engagement with community groups and resources (community RC). Both in terms of identifying those with the skills they need for independent living and healthy community and family life, and identifying those with gaps in skills and capital, the promise of RC is consistent with a view of addiction and recovery that is much more holistic than the management and amelioration of acute symptoms. In principle, this population offers distinctive opportunities to create a metric of continued, existential growth and change among people in the post-acute treatment period. For this group there are no adequate measures of ongoing development of strengths and this is one of the key gaps that an RC measure can potentially address as a marker of positive, long-term growth and the accrual of resources.

This perspective has implications for the commissioning and delivery of addiction treatment and recovery services. Commissioners need to plan beyond acute need and to build continuity of care and effective community connection into systems designed to support the ongoing accrual of RC. Continuing care service models must also incorporate holistic and strengths-based connections and pathways to support effective engagement with community groups and activities, including but not restricted to peer-based recovery support services.

Dissemination and Communication to Practice and Lived Experience Groups

The Betty Ford Institute (11) proposed that the time to stable recovery is estimated at around five years from the initial period of overcoming illicit drug or problematic alcohol use. This is a period associated with reduced risk of return to substance use and growth in other areas of life that will typically occur outside of specialist treatment and so there is likely to be a significant role and opportunity for recovery coaches and RCOs (50,51) to play a prominent role in charting this progress.

One important role these recovery coaches may play outside of specialist treatment settings are as 'community connectors' (52). RCOs also can act as community hubs (e.g., (53)) whose role is to provide positive peer support networks and pathways to opportunities for volunteering and community engagement. In reframing their roles to enhance or build RC, these individuals and organizations will see themselves as part of a larger process which works in concert with (not on/for) the individuals; the synergy that results from this dynamic will benefit both the individuals in recovery and these communities. These RCOs and recovery leaders represent a core component of the community recovery landscape and their role represents a type of RC that can be separated from the social RC of immediate personal relationships. and includes environmental factors that will increase the predictive power of RC measures. As outlined above, one of the key challenges for a RC science will be measuring community RC as available and accessible resources in a community and how that impacts on individual choices and pathways.

CONCLUSION AND FUTURE DIRECTIONS

In the past 20 years there has been a burgeoning literature on RC and excitement about what the concept can offer the field of addiction (54). "Recovery capital is now the emerging international construct for the addiction field. It can translate across the various spheres of addiction influence and delivery. It is the way forward." Yet, the translation of RC has been unsystematic and the field currently relies on self-report questionnaires for the development of the theory and quantification of RC. Particularly with the increased policy attention in the UK and US on recovery generally and RC specifically (55–57), there is an urgent need for conceptual and empirical development to be undertaken in an integrated, systematic way that can offer a viable evidence base to meet this policy need. We have provided an overview of this literature to highlight areas of strengths and areas for future examination to build a strong science of RC. In closing, we suggest that to move RC forward as a conceptual model in an empirically-driven and culturally appropriate manner, that a formal collaboration between scholars, practitioners, and individuals in recovery worldwide working on this issue be established.

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Table 1. Future Areas for Recovery Capital research to address

Areas of Gaps	**Future Questions to Address**
Conceptual Development	• Are there key components of each RC domain that must be present to achieve personal goals or that translate into severe (insurmountable) problems if absent? • What are the most important factors driving the growth of capital in each domain? • How exactly do RC domains interact? • How do models of RC link to models and definitions of recovery? • What roles do peers and therapists uniquely play in supporting this journey? • Should RC factors within each of the key domains vary by context or for particular groups of individuals?
Empirical Testing, Adequacy of Measurement, Analysis	• How does RC change over time? Is the process of RC change the same for all populations? • How frequently should RC be measured during the treatment and recovery process? • When individuals build RC, what shape does RC growth take, i.e., is it more appropriate as summative (simple linear approach) or synergistic (quadratic) model? • Is there a need for a RC assessment for family members of people in recovery?
Use in Treatment and Recovery Settings	• What sort of interventions to build RC can be developed? • How can RC be used in different stages of addiction and particularly in non-acute settings? • Could RC be successfully self-monitored by an individual? • How can RC be used as a marker of readiness for graduation and to direct recovery care planning?
Dissemination and Communication to Policy, Practice, and Lived Experience Groups	• How can scholars bring in different stakeholders (i.e., clinicians, advocates, and family members) into the discussion, research, and dissemination of RC?