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EDITORIAL

Family Science and Family-Based Research in Integrated and Health Care Contexts: Future Considerations for *Families, Systems, & Health*

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The focus on families and application to health sets *Families, Systems, & Health* apart from other sister journals. Family science is a thriving field of study experiencing rapid advances in the discovery, verification, and application of knowledge about families (Burr, Day, & Bahr, 1993; Doherty, Boss, LaRossa, Schumm, & Steinmetz, 1993; National Council on Family Relations [NCFR] Task Force on the Development of a Family Discipline, 1988). It is essential that these advances in family science are transferable to research focused on families in integrated health care contexts, and it is our hope that *Families, Systems, & Health* with be at the forefront in disseminating this work. While there is an abundance of research focused on families and health outcomes, there is much less focused on the dissemination and implementation of family-based interventions in health care and integrated health care contexts. In order to advance our understanding how family members are included in family-based interventions, it is essential to operationalize how family-based interventions involve and assess families. In this editorial, we describe the foundations of family science and health, how these foundations inform family-based research, and the translational bridge of family-based research in health care. We conclude by describing a tiered approach for family involvement and assessment in family-based interventions taking place in health care, with specific attention on dissemination and implementation research in integrated care settings.

Family Science Foundations of Family Based Research in Health Care

Family science is defined as the scientific study of families and the close interpersonal relationships and dynamics found within them (Doherty et al., 1993; NCFR, 1993). This focus on families is different from the long-standing fields of psychology and sociology, which tend to observe and describe individuals or groups of individuals (NCFR, 1993; NCFR.org). Instead, family science research seeks to understand the influence of the family through concepts like family functioning, relationship quality and satisfaction, family support, and interpersonal dynamics (Burr et al., 1993; Pratt & Skelton, 2018; Whitchurch & Constantine, 1993). The assessment and measurement of these concepts is ideally conducted with dyadic (i.e., couples, parents and children), triadic, and multiple perspectives from family members (Didericksen et al., 2018; Doherty et al., 1993).

As the field of family science was being established, collaboration with scholars from diverse health-oriented multidisciplinary backgrounds (i.e., nursing, medicine, dietetics) provided the foundation for studying families and

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health. Grounded in multidisciplinary collaboration, the aim of family science research is to inform evidence-based practice, from a strengths-based perspective applied to prevention and treatment contexts (Doherty et al., 1993; NCFR.org). Often, this research is termed "family-based," by including the patient and at least one targeted family member (Berge & Everts, 2011). There is a wide range of family-based research, grounded in family science, as applied to health outcomes varying from assessment of patient only perceptions, to the assessment of patients and a targeted family member, to the inclusion of patients and family members in interventions, and further interventions for impaired family dynamics in the treatment of a health-related condition.

The Translational Bridge of Family Science and Health Outcomes

Polaha and Sunderji (2018) set forth a vision for *Families, Systems, & Health* to translational family science across the research continuum (Zerhouni, 2003). The metaphor for science translation is a bridge, in which basic science is on the far left, applied science and studies of efficacy and effectiveness are in the center, and dissemination and implementation science are on the far right, articulated to real-world settings on the land beyond. Discoveries across this continuum form the foundation upon which the science builds. While there is a wealth of empirical literature on the far left of the bridge representing family science and health outcomes through basic science, there is much less research representing the far right side of dissemination and implementation. Below we highlight exemplars of family science studies that span the translational bridge to examine interpersonal dynamics and health outcomes, with particular attention paid to dissemination and implementation.

Basic Science

Representing the left portion of the translational bridge, basic science, plays a critical role in the discovery of associations between family factors, such as interpersonal dynamics, and health outcomes. While basic science studies are abundant in the literature, those conducted with novel populations, constructs, or conditions provide important new information about the design and development of family-based interventions in health care, including which family constructs may be modifiable to intervention or change over time. For example, Segrin and colleagues (2019) used the actor-partner interdependence model to evaluate the longitudinal interdependence in psychological and physical distress between survivor and caregivers. They found that survivors and their caregivers experienced interdependence in psychological, but not physical, distress. They further suggest that emotional contagion, or the synchronization of emotional responses, may account for the comparable emotional, but not physical, reactions between survivor and caregiver. These findings establish preliminary and new evidence for the development of a family-based intervention aimed at emotional well-being of both survivor and caregiver.

Efficacy and Effectiveness

Further along the translational bridge are efficacy and effectiveness studies. These studies build upon basic science to pilot interventions, often using randomized controlled trials, in order to test for changes in health behaviors and/or conditions through the inclusion of family members and/or modification of family interpersonal interactions. Although these studies are becoming more common, they are still greatly underrepresented. Dougherty, Thompson, & Kudenchuk (2019) conducted an efficacy study that sought to compare two interventions aimed at improving the physical and psychological outcomes of patients with an implantable cardioverter-defibrillator. The first intervention consisted of education, telephone coaching, and video demonstrations for the patient alone while the second differed only in inclusion of the partner. Results of the prospective randomized controlled trial revealed the patient + partner intervention was more effective, with significant improvement in outcomes for both patient (symptoms, depression, and knowledge) and partner (caregiving burden, self-efficacy, and knowledge). These findings highlight the reciprocal influence of patients and partners in health.

Dissemination and Implementation

The most poorly constructed portion of the translational bridge is the far right side representing dissemination and implementation of family-based interventions in health care. Oxford and colleagues (2018) evaluated the implementation fidelity of Promoting First Relationships, a 10-week home-based intervention aimed at preparing health care providers to help caregivers become more emotionally available to their children under age three. Specifically, they used a multidimensional approach to evaluate implementation of their intervention including training uptake, content adherence, delivery quality, dosage, and participant satisfaction. Findings showed high uptake and content adherence, but variable provider delivery quality. Program dosage and participant satisfaction were also high. Oxford's study represents a timely exemplar of a successful approach to achieve implementation fidelity of an evidence- and family-based intervention.

Family-Based Research in Integrated and Health Care Contexts: Future Considerations

While the research on family science related to health conditions is abundant, translation of this work into family-based interventions in health care, especially integrated health care settings is lacking. Further, when family-based interventions are conducted, it can often be difficult to discern how family members are included. Figure 1 details the levels of family inclusion (low, moderate, and high) with respect to the involvement and assessment of outcomes from families in integrated and health care settings. It is important to note that the family-based research conducted is parallel with the level of family inclusion in clinical care. Similar to integrated health care, where a high level of integration is not the goal for every health care settings, a high level of family inclusion may be not ideal for every health care setting. The utility of Figure 1 is to provide a means of operationalizing how family members are included and what outcomes are assessed in family-based interventions delivered in integrated and health care settings. Thus, implementation research at the point of delivery will look different with low, moderate, and high family inclusion.

Low family inclusion involving the patient and a targeted family member (see Figure 1) is often seen through the engagement of a parent in integrated pediatric primary care or a partner/caregiver of an adult in family medicine settings. Low family inclusion involves screenings and assessments that primarily focus on patient outcomes from both the patient and targeted family member's perspective. This allows research to be conducted on concordance or agreement between the patient's and a targeted family member's responses pertaining to an aspect of the patient's health: for example, the assessment of child and parent perspectives about child adherence to asthma care recommendations. This involvement of a targeted family member in assessment and intervention provides important information about progress made in working toward a health-related goal or outcome, which can be utilized by the integrated health care team to modify dosage and type of intervention delivery. At a low level of

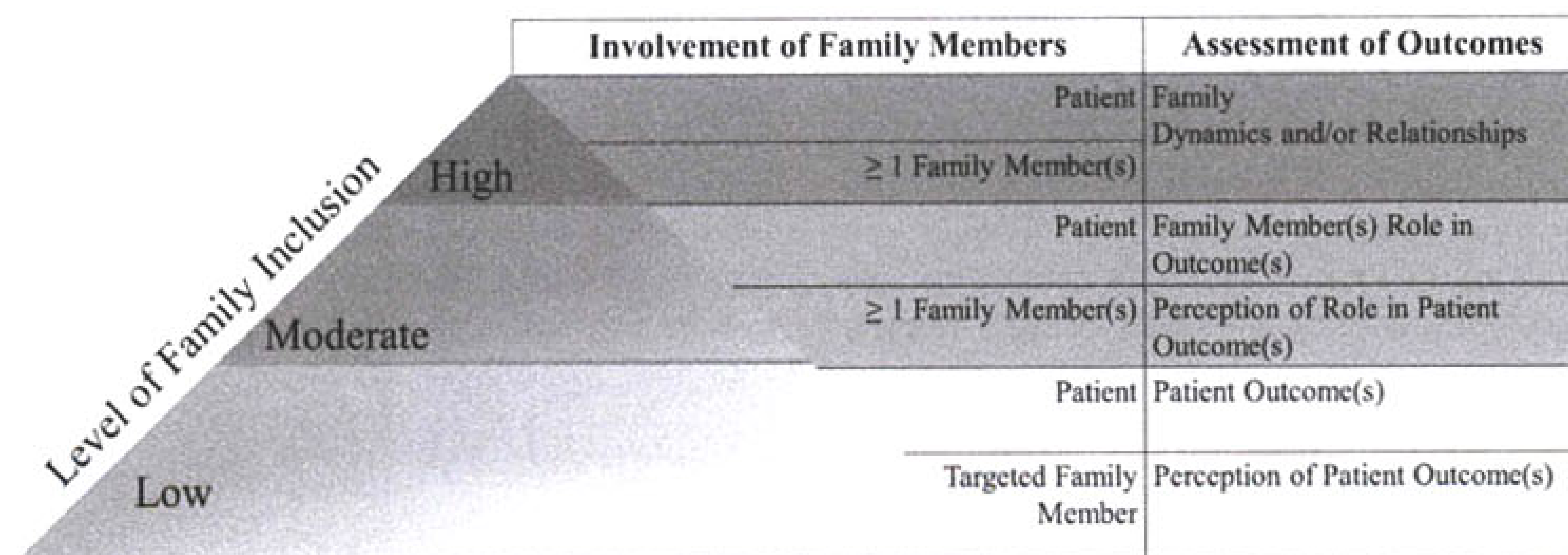

Figure 1. Levels of Family Inclusion in Family-based Research in Health Care.

family inclusion, research at the point of delivery may asses how psychoeducational interventions delivered to patients and a targeted family member may increase patient adherence, behavior change, and health outcomes of a particular condition. At the provider and system level, implementation research about the feasibility, acceptability, adoption, and appropriateness of such interventions in integrated and health care settings are also needed.

Moderate family inclusion includes at least one family member, more family members when feasible, and includes the patient's and family member's perspectives of the family member's role in the patient's health: for example, in routine visits with bariatric surgery clinical teams, assessing how supported patients feel by their attending family members in making and maintaining dietary changes pre- and postoperatively, while simultaneously assessing how supportive family members believe they are to patients as they make dietary changes. This dyadic assessment of family members provides essential information that allows the focus of intervention in health care to move from being isolated to patient outcomes and perspectives of patient outcomes, to included aspects about the interpersonal interactions between family members that support patient outcomes. Hence, interventions may include how romantic partners can be more supportive to patients as they make behavioral changes. Subsequently, these interventions in integrated health care settings involve the necessary collaboration of behavioral health and medical practitioners to intervene with patients and family member's behaviors affecting patient health outcomes. Research at the point of delivery in integrated health care settings with moderate family inclusion may assess practical aspects about how behavioral and medical providers collaborate to screen and refer families into specialized interventions for interpersonal interactions, and the feasibility of integrating interventions into routine services and costs of such services.

High family inclusion builds upon prior low and moderate assessments of patient outcomes and family members' roles in patient outcomes, to family dynamics and relationships. This may include how the overall functioning of the family (family functioning) affects patient adoption of new health behaviors. Families with clinically impaired family functioning may benefit from broader interventions in, and extending from, health care (via remote or in-home delivery options) to intervene upon problematic dynamics. Research conducted with a high level of family involvement in integrated health care is able to screen and assess to determine if interventions should be delivered to aid the overall family and the patient at the same time. In specific situations, interventions may need to be delivered at the family level prior to being delivered directly to the patient, so that the family environment is conducive for health behavior change (Pratt & Skelton, 2018). For example, families with a high degree of chaos and limited structure may need assistance with establishing rules and boundaries before behavioral changes can be successfully implemented for a pediatric patient to have routine sleep/wake times and the family to do healthy meal planning. Research conducted with a high level of family involvement can assess for changes in family-level outcomes from family-based interventions in integrated care, such as changes in impaired family functioning, as a result of family-based intervention. Further, research conducted with a high level of family involvement can determine which family-level variables may severe as mediators or moderators of patient outcomes in family-based interventions delivered in integrated and health care contexts.

Research at the point of delivery with a high level of family inclusion in integrated and health care settings should seek to determine the capacity of the setting and team to assess and intervene upon challenging family dynamics and relationships in routine care. In addition, different delivery approaches such as group family visits or family-based interventions delivered by behavioral providers, remotely or in-person to patient homes, may allow for the involvement of multiple family members while remaining engaged with the health care team. It is important that the future of family-based research, built on a family science foundation, in health care considers alternative methods of engagement for families and family members who are traditionally more challenging to reach or reluctant to engage.

Conclusion

Families, Systems, & Health seeks to publish rigorous family science research in health con-

texts representative of the more right-hand side of the translational bridge, with an emphasis on evaluating dissemination and implementation of family-based approaches in integrated and health care contexts. Building on the strong foundation of research conducted in family science and health care, we encourage our readers and future submissions to contextualize and define the inclusion (involvement and assessment) of families in interventions to determine point-of-care delivery to patients and families in different health care contexts.

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