A Conceptual Framework for Reproductive Empowerment:

Empowering individuals and couples to improve their health

Background Paper

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Contents

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BACKGROUND

In November 2016, ICRW and MEASURE Evaluation held a joint technical convening on reproductive empowerment. In preparation for this meeting, this white paper was prepared as background reading for invited convening experts.

The purpose of this white paper is twofold: first, the paper introduces a conceptual framework of reproductive empowerment, developed primarily by ICRW in consultation with MEASURE Evaluation and expert consultants at the technical convening. Second, the paper presents the results of a literature review of reproductive empowerment measures, conducted by MEASURE Evaluation with support from ICRW in advance of the technical convening.

The primary audience for this white paper includes sexual and reproductive health scholars and researchers, program implementers, and donors working in the areas of family planning, reproductive rights, and empowerment more broadly.

INTRODUCTION

The past two decades have seen an increased recognition of the importance of empowerment, particularly of women, to a range of development outcomes. Despite this, there remains a lack of consensus about what empowerment represents conceptually, how it can be measured, and how it can be operationalized in programming and policy (Malhotra & Schuler, 2005; James-Hawkins, Peters, VanderEnde, Bardin, & Yount, 2018). This conceptual discord has persisted even as substantial progress has been made in our understanding of the multidimensional and multilevel processes of change that characterize empowerment as a concept. As a result, it is unclear how to best enhance the empowerment of individuals and concretely assess progress, even as this is increasingly acknowledged as an important goal for programming and policy.

While a substantial body of research has explored the role of empowerment in influencing reproductive outcomes, it is only recently that researchers have explicitly considered the reproductive sphere as a distinct dimension of empowerment itself. However, as with the broader discussion around women's empowerment, there is considerable diversity in the terminology used to describe the concept of reproductive empowerment. For example, it is unclear whether authors using the terms "reproductive autonomy", "women's agency", "reproductive rights", or "reproductive control" are referring to the same or related concepts. This lack of standardized terminology around what constitutes reproductive empowerment, along with the conceptual obscurity this reflects, has direct implications for how it is measured. To date, a range of approaches exist that capture information on distinct components of the reproductive process, with only incremental progress towards developing widely-applicable and agreed-upon reproductive empowerment measures. As a result, there is considerable variability in the research linking empowerment to reproductive health outcomes, and therefore the responsiveness of these outcomes to program and/or policy interventions focused on increasing empowerment. This limits the ability of policy-makers and programmers to design effective interventions targeting both empowerment and reproductive outcomes.

We define reproductive empowerment as:

Both a transformative process and an outcome, whereby individuals expand their capacity to make informed decisions about their reproductive lives, amplify their ability to participate meaningfully in public and private discussions related to sexuality, reproductive health and fertility, and act on their preferences to achieve desired reproductive outcomes, free from violence, retribution or fear.

In the context of family planning, this implies that individuals should be able to express their childbearing desires to their partners, providers, and others; meaningfully participate in communication and decision-making with partners, with providers, and within their communities; and shape desired outcomes related to marriage, the conditions of sexual intercourse and the use of contraception.

The goal of this white paper is to introduce a framework of reproductive empowerment that focuses specifically on the reproductive sphere while drawing on the insights from prior work on empowerment and to highlight existing attempts to measure this concept. We hope that this will both add conceptual clarity to discussions around reproductive empowerment and provide the impetus to develop improved measurement frameworks that will assist in moving the understanding of the field forward in ways that enhance empowerment.

We begin by briefly reviewing the ways in which empowerment has been conceptualized across various fields of enquiry, focusing on key concepts that are relevant to reproductive empowerment specifically. Next, we introduce a conceptual framework for reproductive empowerment that draws on prior work done across a broad range of disciplines, with the goal of creating an approach that is simultaneously specific to reproductive matters and sufficiently flexible to allow for variation across different contexts and sub-groups. We then explore how reproductive empowerment has been measured through a detailed review of recent literature examining this issue, identify key areas and domains of measurement from that review, and highlight a series of validated measurement approaches. Finally, we examine how these measures compare to the key concepts and relationships identified in the conceptual framework and what this suggests for directions for further research.

While sexual rights and sexuality have a bearing on and, in many cases, are closely linked to reproductive empowerment, we focus primarily on empowerment as it directly relates to reproduction. This should not be taken to imply that these issues are not relevant to general discussions around empowerment and reproduction, but rather that this is an area that merits attention beyond what is feasible in this work.

CONCEPTUALIZING REPRODUCTIVE EMPOWERMENT

An extensive literature has explored the conceptualization and measurement of empowerment, covering a variety of disciplines and schools of thought, including economics, sociology, anthropology, demography, public health, and rights-based approaches. We draw from this literature in developing a conceptual framework of reproductive empowerment, relying especially on the work focused on women's empowerment. We begin with a focus on women not only because the women's empowerment field has advanced the conceptualization of empowerment the furthest, but because reproduction is localized in the bodies of women, and as a result, they bear a disproportionate share of the consequences of reproduction itself. This does not imply, however, that the resulting framework applies only to women and girls. Rather, it is intended to be applicable to any individual or group for whom reproductive behavior is of importance, regardless of gender or sex. With this in mind, the framework also draws heavily from, and shares key principles with the literature on

reproductive rights, which broadly argues that individuals have a fundamental right to freely and individually make decisions on their reproductive lives. This forms the basis of our thinking on reproductive empowerment, which we primarily view from the perspective of the individual and their relation to other actors at various levels.

Defining empowerment

While there have been many attempts to develop consensus around the concept of empowerment, the meanings and terminologies associated with the concept vary widely. In the field of women's empowerment alone, authors have used terms such as "gender equality", "women's status", "women's agency", and "female autonomy" somewhat interchangeably. These concepts, while interrelated in many ways, are distinct (Alkire, 2005; Malhotra & Schuler, 2005). The term *empowerment* offers a unifying framework that incorporates each of these concepts. Perhaps the most widely used definition of empowerment is that suggested by Kabeer (2001), which is "the expansion in people's ability to make strategic life choices in a context where this ability was previously denied to them." Here we adopt a more general definition of empowerment where it is seen as the ability to assert one's opinions, desires and interests in ways that shape discussions and decisions, to make and influence decisions, and to challenge and change individual and community circumstances. Within this definition, empowerment is conceptualized as the result of the interaction of individual and macro-level or structural factors, such as social norms or the legal environment. There are two central features to most definitions of empowerment that distinguish it from related concepts such as autonomy or broader discussions around 'status': *process* and *agency.* Together, process and agency require that empowerment must involve an ongoing process of change that includes direct engagement of involved individuals as agents of change.

Understanding agency, a component of empowerment

Agency is widely regarded in the literature as reflecting the essence of empowerment itself (Malhotra & Schuler, 2005), acting as a key 'mediator' between an individual's desire to bring about change and the achievement of this goal. As with empowerment, there is little consensus on the precise meaning of 'agency', but broadly it is the capacity for purposive action that draws on social and material resources at multiple levels to realize preferences and choices, enhance voice, and increase power and influence. Within this, the key three components of agency are *choice*, *voice*, and *power* (Eerdewijk et al., 2017):

- '*Choice'* refers to the ability of individuals to make and influence decisions that affect their lives. Of particular importance are the 'first order' choices that are critical to individuals being able to lead their lives they would like to lead – these include (among others) choices about livelihood; mobility; whether, when and who to marry; friends; and whether, when and how many children to have. Similar to Kabeer (2001), we argue that it is important both conceptually and in terms of measurement to distinguish between choices made from the perspective of real and viable alternatives and those where either option is limited or associated with "punishingly high costs" (Kabeer 2001). The former represents 'real' choice, while the latter at best is a form of constrained choice that has very real implications for agency.

- '*Voice'* concerns the capacity to actively assert one's interests, articulate opinions and desires, demand change, and to shape and share in discussions that are relevant to one's life. This may take place both in private spaces, such as within interpersonal relationships or households, or

in public spaces. Eerdewijk *et al.* (2017) identify four aspects of voice that are especially important to empowerment in the public sphere: participation and representation in political and economic decision-making; the ability to organize collectively; adopting leadership positions; and the ability to demand change and hold institutions accountable, an emphasis similar to that placed on participation and accountability in rights-based family planning approaches (e.g. FP2020, 2016; World Health Organization, 2014). This suggests that a comprehensive view of voice must include the ability to participate in and take leadership roles in decision-making processes within both private and public spaces.

- '*Power*' and its exercise by individuals towards and from others plays a central role in constraining or enabling voice and choice, as both are largely experienced within the context of relationships. The literature on power emphasizes various dimensions of power: 'power-over' which refers to power through confrontation and expressions of dominance and subordination; 'power within', which refers to an individual's sense of self-worth and rights; 'power-to', which refers to an individual's realization that they can change and challenge their situation related to existing hierarchies and structures; and 'power-with', which refers to the collective power individuals have when acting collectively (Alsop, Holland, & Bertelsen, 2006; Rowlands, 1998). Power can be expressed in visible and invisible ways, acting through observable patterns and internalized power structures. Rowlands (1998) also differentiates between power at different levels, especially at the personal, relationship, and collective levels. We adhere to this approach when considering the way that power may act in within empowerment (and reproductive empowerment specifically). Different forms of power may be more or less relevant at different social levels, but power is decidedly present in all social interactions and plays a critical role in the ability to express voice and choice.

An individual's level of agency is shaped by the interaction of these three components within the context of specific relationships and the *resources* that an individual may bring to that relationship.

The role of resources in empowerment

Kabeer (1999) defines resources (also referred to as assets) as "not only material resources in the conventional economic sense but also the various human and social resources which serve to enhance the ability to exercise choice" (Kabeer 1999). In keeping with Malhotra & Schuler (2005), we view resources not as key components of empowerment itself, but rather as 'enabling factors' that may act as catalysts for empowerment within the context of specific relationships. Furthermore, we view different sets of resources as being relevant at different societal levels, reflecting the multilevel nature of the empowerment process. We conceptualize these levels as being the individual, the immediate relational (including relationships with sexual/romantic partners, family members, peers and other groups the individual is in regular and direct contact with), and the distant relational (e.g. relationships with broader contextual actors, such as social institutions and structures). For example, resources specific to the individual (such as education, knowledge, or self-efficacy) are likely to be particularly relevant to their agency in the more immediate relational context, while resources such as favorable social/cultural norms, available infrastructure, and the culture of relevant institutions are likely to be most relevant when individuals interact with actors at the distant relational level. The effect of resources is cumulative, with resources that are relevant at the individual and immediate relational levels also playing a role in their agency at the distant relational level and, in turn, the broader resources an individual may draw on at the distant relational level having an impact on the types of resources that are available at lower levels of aggregation.

Treating resources as key mediating or enabling factors in the empowerment process has implications for how empowerment is conceptualized and measured. In particular, many of the variables or factors often used to measure distinct dimensions of empowerment, such as education or employment, may be best considered as specific resources that enhance some or all of choice, voice and power rather than indicators or empowerment *per se*. For example, education may increase choice through expanding knowledge of available options, increase power through providing individuals with the skills to better advocate for their position, and increase voice through increasing access to decision-making processes. However, level of education in and of itself does not represent agency or empowerment – rather it is what this implies for these other processes that is relevant. A similar argument can be made for many of the proxy measures used in much of the research linking empowerment to a variety of outcomes.

Multidimensionality and dynamism

Another important aspect to empowerment is its multidimensionality, with individuals able to simultaneously experience empowerment (or disempowerment) across several distinct dimensions, or domains. Malhotra & Schuler (2005) propose five domains of empowerment: economic, social and cultural, legal, political, and psychological. While these are related in the sense that being empowered in one domain increases your likelihood of being empowered in another, it is possible for individuals to be empowered in one domain while simultaneously being disempowered in another. Pratley (2016) argues that there is justification for thinking of a health-specific dimension in addition to the five described by Malhotra and Schuler (2005). In this paper, we take this argument further, arguing that the centrality of reproduction to overall empowerment, particularly of women, and the influence of reproduction to other dimensions of empowerment suggests that it is best treated as a distinct dimension on par with the areas identified in prior literature. We expand on this further in the following section.

Finally, agency and empowerment are not static concepts. As described above, the process component of empowerment, both for individuals and groups, is a defining feature of the concept. The dynamic nature of empowerment is evident in a number of ways. First, as noted above, individuals may experience different levels and trajectories of empowerment depending on the dimension being examined (e.g. economic vs psychological empowerment). Secondly, because both agency and empowerment are experienced through and within the context of relationships of different types and at different levels, an individual may experience high levels of agency at the individual level and or in some of their immediate relationships, but low levels in their community or in their relationships with institutional actors, such as health care providers. Similarly, they may simultaneously experience high and low levels of agency in different relationships, including those with intimate partners. Finally, an individual's level of empowerment in a given dimension is likely to be influenced by life course factors such as age and family formation stage, varying as individuals pass through specific life stages (Lee-Rife, 2010; MacQuarrie & Edmeades, 2015; Samari, 2017). Following Eerdewijk *et al.* (2017), we therefore view empowerment as both an outcome and a process, important at both at specific points and across time, with both being relevant to understanding empowerment more broadly.

Expression of agency: decision-making, leadership and collective action

As the discussion above implies, direct indicators of empowerment should reflect the interaction between choice, voice and power at multiple levels and be sufficiently flexible to allow for the

treatment of empowerment as both an outcome and a process. In addition, Eerdewijk *et al.* (2017) propose three key expressions of agency as central to the empowerment process: *decision-making*, *leadership*, and *collective action*.

- *Decision-making* refers to the ability of the individual to meaningfully engage in the process through which decisions are made, both about themselves and others, in the context of a specific relationship (either personal, such as with a spouse, or impersonal, such as with a state actor). This includes being able to exercise voice and power when influencing or making decisions and may take place in the private and public spheres, either individually or collectively. Although the majority of decisions that involve other influencers are likely to take place at the immediate relational level, the ability of individuals to influence decisions also applies to the distant relational level, including at the community and policy levels. While individuals may prefer to make choices jointly or alone, their autonomy in making the choice whether to include others in the decision-making process is critical to their empowerment, highlighting the role that power plays in shaping empowered decision-making. This is because simply participating in a decision-making process does not necessarily imply that this has been done in a meaningful way that reflects true empowerment – for example, individuals may have been included in communication about a decision but have no real influence on the outcome. As with the concept of choice, attention should be paid to 'first order' decisions that have direct and long-term implications for the life prospects of the individual and their overall empowerment.

- *Leadership* refers to the ability of individuals to take a lead role in shaping processes and structures that have a bearing on their wellbeing and ability to exercise choice, voice and power. Leadership may be formal or informal, individual or collective, private or public, and is critical to affirming voice in ways that create space to challenge power and expand choice. While individuals may play a leadership role in promoting change within their immediate relational sphere, such as through acting as a role model or advocate for younger siblings, this is most commonly conceptualized as playing a role in the more distant relational context, such as participation in community meetings or other public fora, and through participation in broader social or political movements.

- *Collective action* refers to the ability of groups to collectively take action to improve their status, increase voice, and challenge existing power structures in ways that enhance and expand choice to a degree that is impossible through individual action alone. While individuals may act collectively to bring about change within the immediate relational sphere (such as when individuals appeal to others in their social network), collective action is most commonly conceptualized as acting at aggregate or macro-levels, including the community, nation or international. Historically, collective action has been fundamental to the process of social transformation and, through increasing the ability of groups to hold institutions accountable, institutional change.

These three components effectively capture much of the practical expression of agency at multiple levels, with each being shaped by and influencing voice, choice, and power, and collectively, representing a basis for assessing the empowerment of individuals effectively. Each of these three components of agency influence each other; each is dependent in part on the resources individuals can draw on at different levels; and each has direct implications for the ability of individuals to control their lives in strategic ways that maximize their wellbeing.

Empowerment and reproductive behavior

A large body of research has explored the link between empowerment and reproductive outcomes, often with a focus on the role of women's empowerment. Two recent systematic reviews of the literature—one examining the link between women's empowerment and fertility (Upadhyay, Dworkin, Weitz, & Foster, 2014) and the other women's agency and contraceptive use (James-Hawkins et al., 2018)—found a positive association between women's empowerment, agency, and beneficial reproductive outcomes such as lowered fertility and contraception use in the majority of reviewed studies.

Overall, while this research provides a compelling case for the importance of women's empowerment for reproductive outcomes[1], both reviews found that this relationship was sensitive to how empowerment or agency and their various components were conceptualized and measured. This finding, coupled with the significant variation in the types of measures used in the included studies[2], suggests that a lack of a comprehensive conceptual framework for empowerment broadly, and women's empowerment specifically, is hindering a clear understanding of its importance to reproductive outcomes. This is also evident when considering reproductive empowerment - while there is general agreement around viewing the reproductive sphere as a distinct domain of empowerment, virtually all empirical work has focused on a limited range of domains of reproductive empowerment, such as interpersonal sexual relationship power, agency, and decision-making (e.g. James-Hawkins et al., 2018; MacQuarrie & Edmeades, 2015; Upadhyay et al., 2014). This reflects a failure to treat reproductive empowerment as a fully-fledged process that both mirrors and shapes the processes involved in overall empowerment more broadly.

As a result, the literature remains limited in its ability to fully explore how empowerment is linked to reproductive outcomes. First, little of the research has explored the dynamic nature of empowerment, either as a process or from a life course perspective (some exceptions to this are the work by (Lee-Rife, 2010; MacQuarrie & Edmeades, 2015; Samari, 2017). Second, the majority of this research has focused on micro-level processes and choices, such as spousal or household decision-making regarding reproductive behavior. While a focus on this level is in many ways appropriate given that household and intrafamilial relations are uniquely central to both the reproductive process and empowerment in most contexts, especially for women, a focus on the micro-level overlooks the role that engagement in more distant decision-making processes at the community or societal plays in overall empowerment (a notable exception to this is CARE's framework for women's empowerment, which has been applied to reproductive health). Finally, there is little in the way of consensus around what constitute resources for reproductive empowerment, or how these may differ depending on the nature and level of the relationships being examined – as a result, much research in this area continues to treat proxies for empowerment, such as characteristics of spousal relationships or educational level, as direct measures of empowerment.

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[1] Little empirical evidence has explored men's empowerment and the role it may have in terms of reproductive empowerment. This is largely because of the privileged position men occupy in most societies, especially within the intimate relationships that shape much of reproductive behavior. Nonetheless, broader societal factors, such as masculinity norms that emphasize childbearing or policy-driven restrictions on SRH information or services, can also hinder men's ability to freely determine their reproductive lives.

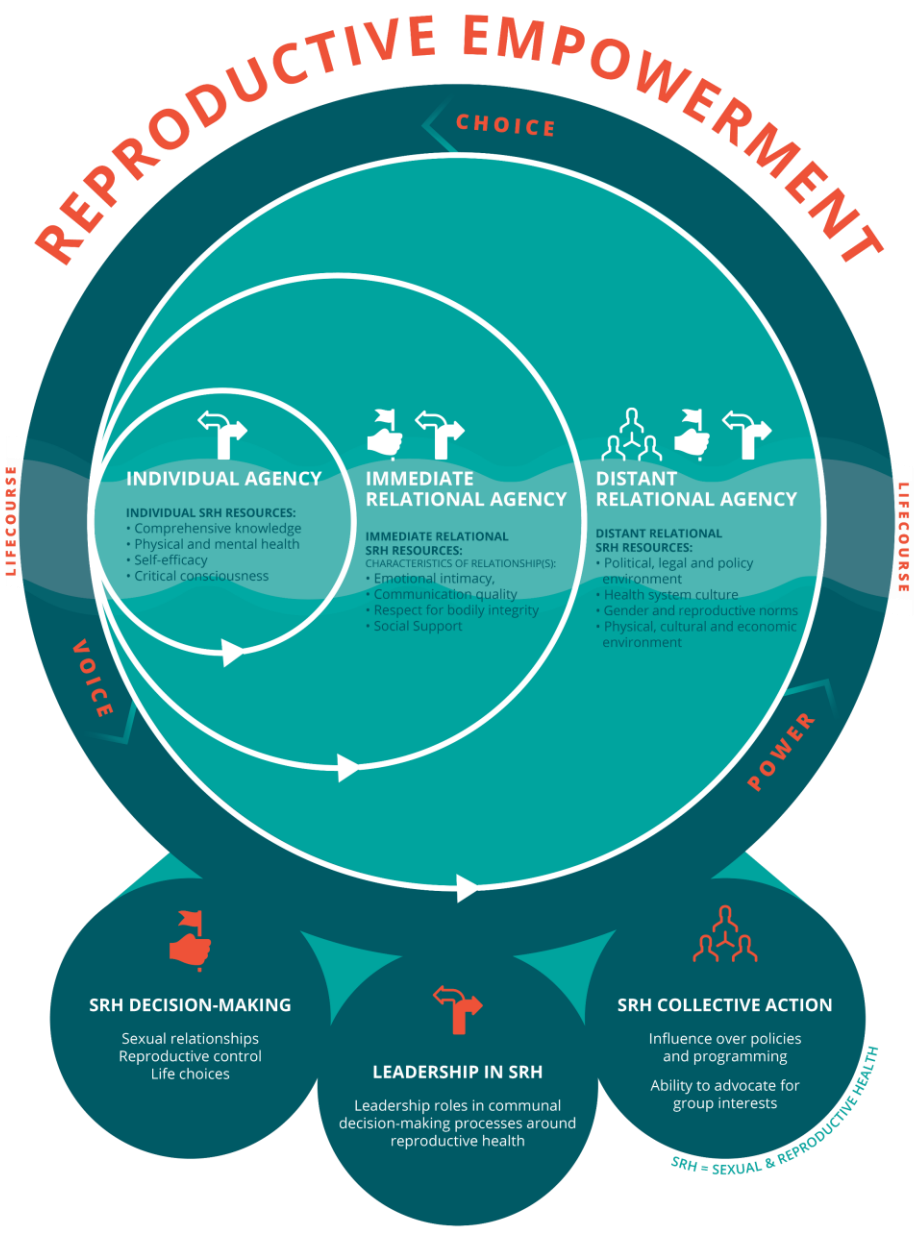
[2] For example, Upadhyay *et al. (2014)* identified 19 distinct domains of women's empowerment in the 60 papers they reviewed.

A CONCEPTUAL FRAMEWORK FOR REPRODUCTIVE EMPOWERMENT

We focus particularly on the three key components of agency identified by Eerdewijk *et al.* (2017) and others, namely sexual and reproductive health (SRH) decision-making, leadership in SRH and SRH collective action. The resulting conceptual framework, presented below in Figure 1, is based on an understanding of empowerment as a multilevel, dynamic process that connects individuals, couples, households, communities, and systemic/structural actors through a network of relationships and interactions. In conceptualizing the way these relate to each other, we draw on the insights of the social-ecological model, where individuals and their behavior are shaped by their immediate social environment (such as households or more intimate relationships), which are in turn imbedded in broader social structures and relationships (such as social and cultural institutions and norms). Individuals are influenced by the broader social structures directly and indirectly through their more immediate social environment, whereas social norms are often enforced most directly. In this sense, social, economic, and cultural systems that operate at the uppermost level of the model play a critical role in shaping the parameters of empowerment in specific contexts. This may be for reasons related to the physical environment – for example, an individual's degree of choice in the reproductive sphere is shaped in part by the availability of health services – or related to the social environment – for example, the level of power a woman can exert in her relationships is often shaped primarily by societal or cultural expectations. These systemic factors, particularly those underpinning societal power structures and expectations, such as patriarchy, may in some cases effectively subsume individuals such that their ability to express or experience empowerment is limited almost regardless of individual or household characteristics. As such, understanding how these different levels relate to each other, and measuring this, is critical to understanding reproductive empowerment.

We view empowerment in the reproductive sphere as an inherently relational concept, expressed through and influenced by the characteristics of relationships across multiple levels of the social-ecological model, be they with parents, in-laws, sexual partners, providers in the healthcare system, or community leaders. The ability of individuals to exercise choice and voice in these interactions is shaped by the relationship-specific resources available to them and the power balance in that relationship. We expand on each of these concepts in greater detail in **Figure 1** below.

Figure 1: Conceptual Framework of Reproductive Empowerment



At the core of the model is an understanding that while reproductive empowerment is fundamentally an individual concept, it is expressed through relationships at multiple levels that interact with each other in a variety of ways. More specifically, we view reproductive empowerment as a function of agency at three levels, all of which are framed by the processes of voice, choice and power: the individual, the immediate relational, and the distant relational, and which are expressed through decision-making around SRH matters, leadership in the area of SRH, and collective action around SRH (while this is not experienced at the individual level, it has clear implications for individual and group agency). This allows us to think more broadly about the types of 'relationships' or interactions that shape empowerment at the individual level, ranging from close relationships, such as with a spouse, to more distant relationships, such as with the health system as a social institution.

We conceptualize the resources relevant to shaping agency at each of these levels as different, though related, accumulating as one moves from individual to distant relational agency. We illustrate the interactions between these levels using the framework of the social-ecological model, with individual agency nested within interactions and relationships with the other two levels of aggregation. Finally, we do not view reproductive empowerment as static, though it can be considered an outcome when viewed at a discrete point in time. Rather, we view reproductive empowerment as the result of dynamic processes of negotiation and renegotiation of power, focusing particularly on the role the transitions through the life course (particularly in terms of reproduction) may play in shaping empowerment at any point in time. As with empowerment more broadly, therefore, reproductive empowerment can be thought of as both an outcome that is specific to a time frame or time point *and* a process of ongoing change.

We discuss each of the levels of agency in greater detail below.

Individual-level agency

In the context of this model, individual-level agency refers primarily to the ability of individuals to conceptualize and define reproductive desires and goals; develop plans for utilizing available resources in pursuit of these goals; and confidently exercise voice to demand meaningful engagement in decision-making processes. At this level, the resources that are most relevant to shaping reproductive empowerment are those internal to the individual, such as their level of sexual reproductive health and rights (SRHR) knowledge, their physical and mental health, and their self-efficacy with regards to their own SRH (including self-confidence, self-esteem, and ability to negotiate). We address each of these in turn below.

Comprehensive knowledge of SRHR includes knowledge of reproductive biology, fertility awareness, body literacy, methods of contraception, where and how to access SRH services, and a knowledge of individuals' rights in the SRH domain (including regarding sexual/bodily integrity and to quality service provision that is respectful of client's rights). A substantial body of literature has shown that this type of knowledge is essential to both making more effective and informed choices about reproduction and in creating an awareness of what is possible in terms of control over reproduction (Goldman & Little, 2015; Hardee et al., 2014; Kabeer, 2005; Kabeer, 2001)

The awareness of fertility being 'within the realm of conscious choice' has long been seen as a critical step in moving to greater control over reproductive behavior (Coale, 1973), but also plays an important role in the development of *reproductive self-efficacy*. We identify four components of self-efficacy to be core to shaping individual agency. The first of these is the development of a critical consciousness in the reproductive sphere whereby individuals can observe and critique cultural and

social norms around reproduction and conceptualize alternatives to these. Once these alternatives are identified, individuals may then make decisions about what their preferences are and act to achieve these. Their ability to do so is shaped by other components of self-efficacy (or factors that influence it), such as their self-confidence/esteem, educational level, and negotiation skills, all of which act as resources for individual reproductive agency. In particular, sexual self-esteem or one's "…perceptions of worth as a sexual person, pride in one's own sexual behaviors or conduct, and perceptions of [one's own] sexual attractiveness" (Harden, 2014) has the potential to shape sexual behavior in ways that heighten or lower the risk of adverse outcomes (Lee-Rife, 2010; Wingood & DiClemente, 2000).

Finally, the physical and mental health of the individual has a significant bearing on their level of agency at any given point in time, influencing their ability to make informed choices, actively voice their concerns, and the level of power they are able to exert in interactions with others. In some cases, physical health may limit or potentially eliminate the range of reproductive options, as in the case of infertility, which can have very significant effects on agency and empowerment (e.g. (Hasanpour, Bani, Mirghafourvand, & Yahyavi Kochaksarayie, 2014; Pedro, 2015), while in others poor physical or mental health may heighten vulnerability to coercion.

Immediate relational agency

Immediate relational agency refers to the ability of individuals to exercise choice and voice with regard to their reproductive desires and preferences in their interactions with actors in their most immediate environment. These actors include peers, family members, and romantic/marital partners. Agency at this level is primarily exercised through the decision-making process around their sexual and reproductive health, though individuals may also play a leadership role this level via peer and familial networks. The relative balance, or lack thereof, of power in these more immediate relationships is crucial to shaping choice and voice with regard to reproductive behavior, as has been discussed extensively in the literature (e.g. (Blanc, 2001; Harrington et al., 2016). As discussed above, this level of social interaction is most directly influential in most people's reproductive lives and the most researched (e.g. Do & Kurimoto, 2012; Hogan, Berhanu, & Hailemariam, 1999; Lee-Rife, 2010; OlaOlorun & Hindin, 2014; Upadhyay & Karasek, 2012)

We conceptualize the relevant resources that individuals may draw on at this level as being primarily related to the 'character' or 'nature' of specific relationships (in turn shaped by broader norms), particularly in terms of emotional intimacy, the power balance between the individual and the other actor(s), level and type of communication in the relationship (including bargaining and negotiation processes), the level of reproductive coercion (physical or psychological), and the level of violence (physical, sexual, or psychological) in the relationship. Each of these factors has been found to influence reproductive behavior among women either independently or in combination with each other, and each may either enhance or restrict reproductive empowerment. An alternative approach would be to conceptualize this as 'relationship quality', which a growing body of literature suggests can significantly influence reproductive outcomes when measured using a spousal/partner dyad (e.g. (Cox, Hindin, Otupiri, & Larsen-Reindorf, 2013; Manlove et al., 2011; Manlove, Ryan, & Franzetta, 2007). Although there is very little literature documenting the effect of the character of other relationships (such as parents, elders, in-laws) on reproductive outcomes, these relationships clearly may have influence behavior. These other relationships can act as resources to the couple to support decision-making and negotiation around reproduction, especially when some of the other individual and immediate factors such as self-efficacy or emotional intimacy are lacking. Alternatively, they may prove to be powerful inhibitors of agency, often reinforcing norms, such as those related to

childbearing or gender-appropriate behaviors within relationships. Thirdly, community-based institutions such as churches, civil society organizations, or local health clinics can also influence reproductive agency, by providing education, counseling, or other services that directly support individual's ability to make and influence decisions (Blanc 2001). Though community-based institutions are often expressions of resources at the distant relational level, they can play a key role at the immediate and individual level as well.

Several points related to the way reproductive empowerment is conceptualized here merit further discussion. First, while the immediate relational resources described above may play a particularly important role in shaping agency at this level, they do so primarily by acting as mediating factors between individual agency and the dynamics specific to individual relationships. Therefore, the resources that are useful in terms of creating individual agency, such as knowledge or self-confidence, will also be useful at the immediate relational level, though their effect will somewhat depend on how they interact with the characteristics of the relationship being examined. It is important to note again that many of these factors are often used as direct measures of empowerment – we argue that it is more appropriate to view these as resources or factors that enable agency and empowerment within the context of specific relationships, particularly in terms of decision-making, leadership and collective action. Second, true reproductive agency at the immediate relational level is likely dependent on the interactive effect of multiple relationships, of which some carry more weight than others. For example, there is considerable evidence of the role that mothers play in many contexts in shaping reproductive decisions for their sons and daughters-in-law. In the context of reproduction, the characteristics of one's relationship with sexual partners is likely to be particularly influential, though others, such as parents, elders, in-laws, or friends may also have an influence over the ability to exercise voice and choice. One implication of the influence of multiple people individuals have relationships with is that a person may, at any given point in time, simultaneously experience empowering and disempowering relationships. Similarly, community-based institutions can also serve to promote agency or reinforce disempowering norms and behaviors, including at the individual and immediate relational levels. These overlapping influences are especially important in settings where decision-making is more communal but is a factor in all settings, to some extent.

Distant relational agency

Agency at the distant relational level is based primarily on the ability of individuals to exert voice, choice and power in their interactions with actors outside of the realm of immediate relationships. These actors may be at the community, regional, or national level, and may include health care providers, religious and political leaders, institutions (including the legal, political, and health systems themselves), and the international development community. Each of these actors may play an important role in shaping reproductive *choices* at the individual level (through delineating the range of available options); *voice* in reproductive decisions at the macro level (through facilitating or obstructing direct participation in decision-making about the provision of reproductive health services); and, often by virtue of being state actors, determine the *power* of individuals and groups to shape their reproductive lives through *collective action*. In contrast to the individual and immediate relational levels, agency at the distant relational level incorporates a vision of voice that is more focused on meaningful engagement with systemic actors through enabling opportunities for leadership and collective action in shaping broader reproductive policies, either as an individual or as a member of a collective group. This does not mean, however, that individual factors or interactions are not relevant at this level – rather, these interactions are often framed within the context of interactions with systemic actors or institutions. For example, an individual's interaction with health care providers is shaped both by the power imbalances related to the characteristics of two individuals or groups (such as clients and providers) involved and the power inherent to the health

care system as a social institution. Interactions with other influential individuals, such as political figures, traditional/cultural leaders, and religious leaders are subject to the same types of power relationships.

The resources that facilitate agency at this level shape the physical, economic, and social environment within which reproductive choices are delineated and made, often referred to as the 'enabling environment'. At this level, political and legal frameworks play an important role in defining reproductive rights, often through placing limits on access to specific services based on factors such as age, sex or marital status, or through refusing to provide specific services in favor of others. Hardee *et al.* (2014) point to policy as an important factor in determining the degree to which the provision of family planning is conducted in a way that is mindful, respectful, and protective of individual rights in addition to shaping key components of service delivery such as quality, effective management and accountability, and access to a range of options. These policies often have the effect of creating a receptive culture within the health system that appreciates the individuals and communities utilizing its services, is oriented towards the needs of service users, and is accountable to users/clients. Depending on the nature of the culture created, this may have the effect of reducing the empowerment of users in multiple ways, including 'top-down' decisions on the types of services to be provided, a lack of practical choices when seeking services, or outright coercion. In environments like this, even those who have considerable agency at the individual and immediate relational levels may find themselves fundamentally disempowered, both in terms of their ability to exercise choice and, through their inability to be able to influence the health system itself (i.e. voice).

Broader systemic factors are particularly important at this level, though clearly have tremendous influence on agency at the individual and immediate relational levels also. These systems of social organization, including elements such as patriarchy, ethnicity, religion, caste, and social class, are often deeply internalized within individuals and social interactions, and directly influence reproduction in several ways. Examples of how this works in practice include pressures for individuals to prove fertility through childbearing; norms around ideal number and sex composition of children; norms around appropriate behaviors for groups such as women, men and adolescents; the salience of communal versus individual rights; individual biases among health care providers; and the ability of socially or economically marginalized groups or individuals to advocate for themselves in interactions with more powerful individuals or structures. Among the most important of these are those related to gender, with social 'rules' regarding appropriate behaviors of both men and women having an important role in motivating a range of health outcomes. Gender norms linking femininity and masculinity to fertility and family formation also play an important role in the degree of empowerment individuals have in the reproductive sphere. These often provide the context for the character of the relationships at the immediate relational level, but also fundamentally shape the interactions between individuals and actors at the distant relational level. For example, in South Asia particularly, restrictions on mobility of women and expectations around spousal consent limit women's reproductive options within the health care setting, while also making leadership roles in reproductive health discussions at the aggregate level more challenging for women. Men may also find that they are excluded from consultations around reproductive matters, often considered to be 'women's business', or engaged less fully than would be ideal due to these same beliefs. Finally, reproductive empowerment is bounded at least in part by the physical, cultural and economic environment. Individuals living in areas where service provision is insufficient or where poverty is a major barrier to access are likely to have less choices available to them in their reproductive lives and find themselves in situations where their ability to advocate for improved services is extremely limited.

Reproductive empowerment as a process and an outcome

As with empowerment as a whole, reproductive empowerment can be considered both a process and an outcome (Eerdewijk et al., 2017). As an outcome, it is a measure of the degree of freedom individuals have in shaping their reproductive lives at that point in time. As the preceding discussion clarifies however, reproductive empowerment as we conceptualize it is also a dynamic, non-linear process that is dependent on both the needs and desires of individuals and the relational context they operate in. In addition to the potential differences individuals may experience in different relationships, an individual may be relatively empowered at one level but not another, or in one domain of empowerment and not another. As a result, it is most appropriate to view reproductive empowerment as a moving target, with a gradual, if at times inconsistent, movement towards increased levels of reproductive empowerment. This process of dynamic change is reinforced by the influence of the life course stage on reproductive empowerment – reproductive empowerment has a different meaning and implications at the earliest and latest stages of the life course, peaking in significance during the life stages where individuals form relationships and families and/or begin sexual activity. Even at these stages, however, reproductive empowerment remains in a constant state of flux, increasing or decreasing as individuals experience key life events. Lee-Rife (2010), finds that while women's empowerment in rural India is relatively stable from marriage onwards, it is responsive to reproductive events such as mistimed pregnancies or the birth of children. Other research suggests that in some contexts, increased age, the birth of children (particularly sons) and the transition from daughter- to mother-in-law may significantly change women's status in the household, with implications for her empowerment (Gupta, 1996; Hindin, 2000). Together, these factors caution against relying too heavily on cross-sectional perspectives on empowerment, though these can provide key information about broad correlates of reproductive empowerment and emphasize again the process-orientation of empowerment as a concept.

Reproductive empowerment and rights-based approaches

The rights of individuals to control their reproductive lives lie at the core of reproductive empowerment. As a result, there is considerable overlap between this framework and that of the human rights-based approaches to family planning that have increasingly come to the fore of family planning efforts since the 2012 London Summit on Family Planning (though rights-based approaches to family planning have been a feature of the discourse on family planning programming for much longer). Each of the principles and rights that underpin the rights-based approach (FP2020, 2016) have the potential to empower individuals in their reproductive lives, primarily through increasing choice and voice in the terms of family planning – as a result, these approaches and the reproductive empowerment framework presented here should be viewed as complementary to each other. However, to date rights-based approaches have most often been operationalized with a focus on rights in the context of service delivery and at the policy level (though acknowledging issues related to rights outside of these settings). This may not be sufficient given that many decisions around reproduction take place outside of the service-delivery setting, particularly at the immediate relational level, including those that determine whether and when people marry, how many children they desire and whether and when they interact with the health system. Scholars of the human rights-based approaches to family planning argue that focusing on this (relational) level may not be as high a priority given the primacy of the individual as rights-holders (e.g. (Hardee et al., 2014).

While we agree with the basic premise of the individual as the key rights holder in the reproductive sphere, we view the immediate relational space as critical to understanding empowerment. This is particularly the case for women's empowerment, where household and intrafamilial relations are typically regarded as representing the locus of empowerment and disempowerment in ways that are not true for men (Malhotra & Schuler, 2005). We would extend this to argue that the relational level is especially important for reproduction, as the immediate relational level is also the locus for sexual behavior. This highlights another key component of the reproductive empowerment approach that does not feature as explicitly in the human rights-based approach, namely an explicit focus and acknowledgement of the role of power in shaping all social interactions related to reproduction. Partly because of these differences, we argue that exploring the similarities and differences between human rights-based approaches and empowerment frameworks allows for a fuller examination of both the barriers and resources individuals experience in achieving their reproductive goals and rights and how these may be addressed through policy and programming.

Linking reproductive empowerment to reproductive outcomes

Much of the impetus for conceptualizing and measuring reproductive empowerment comes from trying to better understand its role in shaping reproductive outcomes. In contexts where significant power differentials exist that create a persistent disconnect between fertility desires that are lower than experienced fertility, increasing empowerment is likely to lead to greater use of contraception and, potentially, lower fertility. However, we argue that reproductive empowerment should be treated as an end that merits attention independent from reproductive outcomes. When viewed from this perspective, the types of outcomes that would indicate success in enhancing empowerment differ from the 'traditional' measures of the success of family planning programs, such as contraceptive prevalence or fertility rate. While these are critical to achieving reproductive empowerment, questions around whether individuals are making free and informed choices about their reproductive lives and, through family planning, achieving these goals should be viewed as being equally relevant or important. Appropriate measures of reproductive empowerment's effect are therefore grounded in whether individuals are achieving a better match between their reproductive aspirations and outcomes – even if these involve having a relatively large number of children or making a deliberate choice not to use family planning – and whether individuals are expanding their ability to achieve this match. From the perspective of family planning programs, this suggests that a focus on reducing unmet need/proportion of demand satisfied will be more appropriate than specific targets for use of particular contraceptive methods, contraceptive use/prevalence, or total fertility, and that better matching family planning services to client needs should be a primary goal. **Box 2** illustrates how this may operate, providing an illustrative list of intermediate and long-term outcomes that more accurately reflect maximizing reproductive empowerment as the key goal of family planning programming.

Box 2: Illustrative Outcomes

In the next section, we explore the ways that reproductive empowerment has been measured to date and discuss how these measurement approaches map onto our conceptualization of empowerment. This allows us to both take stock of existing approaches and to suggest new directions for work on reproductive empowerment.

MEASURING REPRODUCTIVE EMPOWERMENT

Literature review process

As noted above, the inconsistency in conceptualizing reproductive empowerment has resulted in the use of a wide range of tools and approaches for measurement. MEASURE Evaluation, with support from ICRW, conducted a literature review of studies that measured reproductive empowerment, with a focus on family planning and reproductive health outcomes. (See **Appendix A** for search terms). The review was conducted between February and July 2016, in tandem with the development of the initial versions of the conceptual framework. As a result, newer measurement approaches, such as the Survey-based Women's empowerment index (Ewerling et al., 2017) are not included in this review. A search of key terms from three databases resulted in 406 full-text articles that were reviewed. We abstracted data from 45 studies that either created and validated their own scale, used a previously validated measure, or employed a combination of the two. Studies represent diverse geographical areas from 23 countries[3], reinforcing the broad interest in measuring and understanding reproductive empowerment for females, males, and couples in various cultural contexts. Half of the studies (n=23) were conducted in the United States or Canada, with the second greatest number of studies (n=9) conducted in sub-Saharan Africa (see **Figure 4**). Abstracted data were analyzed to identify commonly used domains, scales and measures. Below we discuss the most common sub-domains of empowerment that arose during our literature review, followed by a discussion of scales used for measurement, before discussing how these measures map to the conceptual framework.

Literature review findings

Reproductive empowerment was conceptualized and measured in various ways. The sub-domains of decision-making, spousal communication, coercion and violence, and social norms were measured more often than others.

Decision-making

Decision-making, both related to health care (e.g. *Who usually makes decisions about health care for yourself?)* and how earned income is spent (e.g. *Who usually decides how the money you earn will be used?*) arose as a common sub-domain linked to reproductive empowerment (See **Appendix C** for additional examples of scale items). In Nigeria, researchers found that women involved in decision-making were more likely to use modern contraceptive methods (OlaOlorun & Hindin, 2014). Another study in Ethiopia used a 6-item scale on women's involvement in domestic decision-making and found women involved in decision-making were more likely to discuss family size with husbands, space and limit childbearing, and be more knowledgeable of modern contraception (Hogan et al., 1999). One study in Tanzania also used a household decision-making scale, along with scales on wives' and husbands' attitudes towards a wife refusing sex, and attitude towards wife beating, to examine associations with contraceptive methods compared to women less involved in decision-making (Nanda, Schuler, & Lenzi, 2013). Although equitable gender attitudes, which would fall under distant relational resources in our model, were associated with contraceptive use, the decision-making scale

[3] Bolivia, Botswana, Brazil, Canada, Cote d'Ivoire, Ecuador, Ethiopia, Ghana, Kenya, India, Iran, Namibia, Nepal, Nigeria, Oman, Philippines, Portugal, Tanzania, Turkey, Uganda, USA, Vietnam, Zambia

was not. Finally, a study in the Philippines created two distinct scales of decision-making autonomy, measuring household decisions and decisions related to sexual and reproductive health (Abada & Tenkorang, 2012). Authors found that household and sexual decision-making is associated with decreased risk of unwanted births but not mistimed pregnancies.

One component of decision-making is the concept of *decisional balance*, or weighing the pros and cons of a situation. In Vietnam, authors created a scale measuring a man's decisional balance in his wife's use of IUDs and self-efficacy in contraceptive use as a way of determining men's readiness to accept modern contraceptive methods (Ha, Jayasuriya, & Owen, 2003). Men in the pre-contemplation stages of decision-making reported lower self-efficacy and a greater number of cons for wives' IUD use (i.e. health side effects) compared to men in the contemplation and preparation stages. The number of pros exceeded the number of cons in the contemplation/preparation stage as men became more accepting of their wife's use of IUDs. This built off previous work in the United States, which examined the effect of decisional balance and self-efficacy on contraceptive use for women at risk of HIV transmission (Galavotti et al., 1995) and found that self-efficacy for general condom use increased across decisional stages. Beyond these examples, decision-making was discussed and measured as part of multi-dimensional scales of empowerment (discussed below), as well as a scale of marital functioning in Turkey (Hortacsu, 1999). In this study, women's participation in non-gender stereotypical roles (i.e. wife contribution to outside work) and increased decision-making power were positively related to feelings towards one's spouse.

Overall, our review found mixed results regarding the association between decision-making—whether it was related to SRH or other factors—and family planning and fertility outcomes. This may be due to a difference in the validity of the scales and/or cultural differences regarding the predictive value of decision-making on family planning and reproductive health outcomes. Alternatively, this may reflect inconsistency between the theoretical underpinnings of the expected relationship between decision-making and reproductive outcomes and the primary ways in which decision-making has been measured. In particular, the role of couple communication is often overlooked when constructing measures of decision-making, leading to overly simplistic representations of what can be a complex process of negotiation and compromise.

Spousal communication

Many of the above measures have tended to conceptualize empowerment in decision-making from a zero-sum perspective, where sole power over decisions is the preferred expression of empowerment. While this is certainly true in some cases, this approach overlooks the social, emotional, and relational value placed on consensual decision-making and underplays the process-oriented aspects of decision-making. In Nepal, to explore the influence of communication in family planning decision-making among women and their husbands, researchers created a spousal communication index that included 5-items: whether couples had ever discussed family planning; whether they had discussed it in the past 12 months and whether they intended to discuss it; whether women believed their spouse approved of family planning; and whether they were aware of the number of children their spouse wanted (Sharan & Valente, 2002). Spousal communication was positively associated with use of family planning, and the communication campaign led to greater joint-decision-making among couples.

Coercion and violence

Sexual coercion and *intimate partner violence* (IPV) are recognized as concepts related to an absence of reproductive empowerment, as their existence reflects a dearth of power, voice and choice in intimate relationships. While not direct measures of the core components of agency (decision-making, leadership, or collective action), both have an impact on decision-making that can be more directly measured, and both can be regarded as indicators of a disempowering relationship. Scales measuring sexual coercion and IPV have been created to study these outcomes in developing countries and explore their association with women's reproductive health outcomes (Silverman & Raj, 2014). A study in Uganda used a questionnaire to measure undergraduate students' experience of sexual coercion (Agardh, Odberg-Pettersson, & Östergren, 2011). Sexual coercion was associated with a greater number of sexual partners among women but not associated with inconsistent condom use. Another study adapted and validated a measure of reproductive coercion (originally developed by Miller *et al.* in the U.S.) in order to understand the relationship between coercion and violence among women in Cote d'Ivoire (Falb, Annan, Kpedo, & Gupta, 2014; Miller et al., 2014). Nearly half of all women surveyed reported experiencing IPV at some point in their lifetime, with nearly 20% reporting reproductive coercion. Lifetime IPV was associated with increased odds of reporting reproductive coercion.

Social norms

Social norms related to gender roles and SRH behaviors are related to reproductive empowerment, influencing each of the distant relational, immediate relational, and individual levels. While the measurement of social norms is challenging, individual attitudes about norms are often used as proxies for larger cultural and social norms. As noted above, the attitudes of the individual and those who influence them may be important resources in that individual's behavior, particularly when individual attitudes or preferences disagree with those of others and power imbalances are also present. Two studies included in the review used the Gender-Equitable Men (GEM) scale (discussed in detail in the next section) to assess the degree of men's equitable attitudes towards gender roles (Nanda et al., 2013; Stephenson, Bartel, & Rubardt, 2012). In Kenya and Ethiopia, a more equitable attitude was significantly associated with men's reported use of contraceptives (Stephenson, Bartel, & Rubardt, 2012). However, in Tanzania, a more equitable attitude among men was not associated with wives' reported contraceptive use (Nandaet al., 2013).

Other studies measured attitudes towards condoms and the relationship to contraceptive behavior among young adults (18-25 years) in the U.S (Harvey et al., 2006; Snell & Wooldridge, 1998). For example, Snell & Wooldridge (1998) used an Attitudes Towards Condoms Scale among undergraduates and found that sexual assertiveness predicted more reliable contraceptive use, but men's sexual monitoring (i.e. public's perception of one's sexual identity) predicted more favorable attitudes towards condoms.

Multi-dimensional scales of reproductive empowerment

In addition to finding measures or scales that focused on the above dimensions specifically, our literature review found scales that have subscales or incorporate multiple dimensions of reproductive empowerment. Although there was considerable overlap in the domains measured in these studies, each multi-dimensional empowerment scale was distinct, which underscores the complex nature and cultural variability of reproductive empowerment, as well as a lack of standardized measures.

For example, in Nigeria, a scale including sub-scales for *attitudes towards domestic violence; partner prohibition;* and *equitable decision-making* was used to examine family planning use among women 15-49 years (Corroon et al., 2014). Empowered views on domestic violence, decision-making, and freedom from partner prohibition were associated with use of modern contraceptives. In a multi-country analysis, Do and Kurimoto (2012) created a women's empowerment scale that included sub-scales for *economic*, *socio-cultural*, *familial*, and *inter-personal* empowerment domains for women 15-49 years in Ghana, Namibia, Uganda, and Zambia. In all countries except Ghana, overall empowerment scores were positively associated with self-reported female (i.e. pill, IUD, injectable, implant) and couple contraceptive use (condoms, diaphragm, foam jelly). Moreover, in three countries, economic decision-making, negotiation of sexual activity, and perceived agreement on fertility preferences were associated with female-only or couple contraceptive use. Two studies in Oman evaluated associations between women's empowerment and fertility (Al Riyami & Afifi, 2003) as well as unmet need for modern contraception (Al Riyami, Afifi, & Mabry, 2004). The empowerment scale included sub-domains of *involvement in decision-making* and *freedom of movement*. These studies reported that women with greater freedom of movement were more likely to have fewer children; decision-making participation was associated with longer birth intervals; and empowered women were more likely to use contraception. However, empowerment was not a significant predictor of 'met need' since, for half of the women, husbands were responsible for contraceptive decision-making (Al Riyami et al., 2004).

In India, authors created a multi-dimensional scale of empowerment and gender-based power to examine *decision-making*, *control over sexual relations*, and *freedom of movement* among married women or couples (Moonzwe Davis et al., 2014). Davis et al found that empowerment varied by reproductive status, with empowered pregnant women less likely to experience pregnancy related problems; (i.e. excessive bleeding, vaginal discharge, nausea) and empowered non-pregnant women more likely to report general health issues (i.e. headache, backache). In another study in India, authors developed a gender-based power scale, including sub-domains for *women's autonomy* and *husband's inequitable gender attitudes* to measure couples' HIV risk (Agrawal, Bloom, Suchindran, Curtis, & Angeles, 2014). Higher levels of autonomy and men's equitable gender attitudes were associated with decreased risk of husband having extramarital affair, a proxy for risky sexual behavior. Finally, in a study in Gaborone, Botswana exploring women's empowerment and HIV prevention, authors created various sub-scales representing key sub-domains of empowerment: *negotiating power*, *economic independence*, *cultural norms*, and *abuse* (Greig & Koopman, 2003).

Scales measuring sub-domains of or relevant domains to reproductive empowerment

Below we describe the most commonly used and validated scales measuring sub-domains of reproductive empowerment found during the literature reviews (**Table 1**).

Gender-Equitable Men (GEM) Scale

The Gender Equitable Men (GEM) Scale, developed in Brazil and validated in numerous developing countries, measures men's and women's equitable and inequitable attitudes around gender roles related to sexual power dynamics, childcare, housework, and other areas (See **Appendix C** for examples of scale items). It has been used with adults and adolescents to predict SRH outcomes including condom use, contraceptive use, multiple sexual partners and partner violence. Three studies in this review used the GEM scale in Tanzania, Brazil, Ethiopia and Kenya (Nanda et al., 2013;

Pulerwitz & Barker, 2007; Stephenson et al., 2012). Only the study in Brazil validated the scale for the specific study population. While the study in Brazil focused on validation, the studies in Tanzania and Ethiopia and Kenya used the GEM scale as a predictor of contraceptive use. In these studies, equitable attitudes towards gender roles was positively associated with modern contraceptive use among couples. Specifically, equitable attitudes in men was associated with higher reports of contraceptive use in Ethiopia and Kenya. However, in Tanzania, although men on average held more equitable attitudes than women, men holding equitable gender attitudes was not associated with wives' reported use of contraception. While findings suggest the GEM Scale is a sensitive and cross-culturally relevant tool with good predictive validity (Verma et al., 2006), its focus is on broader gender equity issues rather than empowerment.

Reproductive Autonomy Scale

The Reproductive Autonomy Scale by Upadhyay *et al.* measures reproductive autonomy, defined as women's ability to achieve their reproductive intentions (Upadhyay et al., 2014). This tool includes 14 items measuring three sub-domains: decision-making, freedom from coercion, and communication. The decision-making sub-scale measures whether the woman, her sexual partner (or someone else such as a parent or parent-in-law), or both the woman and her partner (or someone else) has the most say in matters around pregnancy and childbirth. The sub-scales on freedom from coercion and communication use Likert scales to measure how much women agree or disagree with a series of statements about pregnancy and sex (See **Appendix C** for examples of scale items). The scale was tested and validated among women in the U.S., examining associations between constructs and unprotected sex in the last 3 months; however, its application in international settings has yet to be psychometrically tested.

Sexual Relationship Power Scale

The Sexual Relationship Power Scale (SRPS) attempts to capture women's subjective experience of power in intimate relationships using two-subscales: relationship control and decision-making dominance (See **Appendix C** for examples of scale items). The SRPS has been validated in the context of HIV-risk among women in the U.S. and implemented in many HIV studies in other countries, such as Ethiopia and Kenya. Stephenson *et al.* (2012) utilized questions from the SRPS in part to assess contraceptive use among rural men and women. A higher score on the SRPS scale was significantly associated with more gender-equitable sexual and reproductive behaviors, such as self-reported contraceptive use. While SRPS focuses on sexual-risk behaviors for HIV, it does not include any items that assess power in matters associated with reproduction (McMahon, Volpe, Klostermann, Trabold, & Xue, 2015).

Sexual Assertiveness Scale for Women

Two studies used the Sexual Assertiveness Scale (SAS), which measures the degree to which women initiate sexual encounters. The scale includes sub-scales for initiation and refusal of sex, as well as assertiveness for pregnancy and STI prevention (See **Appendix C** for examples of scale items). Both studies that utilized this scale were conducted in the United States. Scales were validated among college students, though Morokoff *et al.* (1997) also included some members of the broader community as well. In Morokoff's validation study, they found sexual experience, negative partner response, and self-efficacy to be predictors of sexual assertiveness. Auslander *et al.* (2012) determined that women with lower body esteem were less likely to insist that a partner wear a condom, but body esteem was not associated with initiation of sex or refusal of unwanted sex.

Conflict Tactics Scale: Sexual Coercion Sub-scale

Three studies used adaptations of the Revised Conflict Tactics Scale (CTS2) (Straus, Hamby, Boney-McCoy, & Sugarman, 1996), a widely used instrument to measure intimate partner violence. The CTS2 has five sub-scales: negotiation; psychological aggression; physical assault; sexual coercion; and injury (See **Appendix C** for examples of scale items). In the Philippines, an adapted version of this scale was used to assess prevalence of violence among married or partnered women, and authors found that one in five women reported sexual coercion during their current relations (Ansara & Hindin, 2009). Similarly, the CTS2 was used to predict coerced anal sex in women in Iran (Mohammadkhani et al., 2009). Women experiencing other forms of sexual or non-sexual violence from their partner were at higher risk of experiencing coerced anal sex. In Canada, it was used as a predictor of formal and informal health seeking behavior for men and women aged 15 and above (Ansara & Hindin, 2010). Seeking of formal support sources increased with the severity of IPV. This scale was not specifically validated for the study populations of the articles included in this analysis.

The Women's Empowerment – Multidimensional Evaluation of Agency, Social Capital & Relations Scale (WE-MEASR)

Other scales measure domains related to reproductive empowerment as part of a broader construct of empowerment or gender equity. For example, the multidimensional WE-MEASR Scale by CARE International, measures domains of women's agency; social capital; and relations and includes numerous scales within each domain, including support for traditional gender roles (male dominance); self-efficacy to discuss and use family planning and self-efficacy to refuse sex (CARE USA, 2014). The WE-MEASR tool is being refined and validated in various cultural contexts. *Note: The WE-MEASR was not included in the list of validated measures because, at the time of the literature review search, there were no peer-reviewed publications of it. However, given the appropriateness of this WE-MEASR we have added it here.*

Table 1: Commonly used validated scales on subdomains or related domains of reproductive empowerment (blue validated in study population, purple validated elsewhere)

Author & Country	Scale	Outcome of Interest	Level	Study Pop	Validation
Ansara & Hindin (2009) •Philippines	1. Conflict Tactics Scale	O.1. Prevalence of violence (psychological, physical, sexual)	Immediate relational SRH resource	Women who were either married or living with a partner	Not reported

Author & Country	Scale	Outcome of Interest	Level	Study Pop	Validation
Ansara & Hindin (2010) •Canada	1. Conflict Tactics Scale 2. Emotional & financial abuse	O.1. Formal and informal health seeking behavior	Immediate relational agency; Distant relational agency	Heterosexual women and men (15+ years)	Not reported
Auslander, Baker, and Short (2012) •USA	1. Body Esteem Scale for Adolescents and Adults (BESAA) 2. Sexual Assertiveness Scale for Women (SAS)	Sexual assertiveness	Individual agency	College students; women (18 -24 years)	Validated in current study; comparative to results from other studies in same age group Appearance: α = .89 Weight Satisfaction: α = .91 Attribution: α = .69 Initiation: α = .77 Refusal: α = .76 STD/Pregnancy Prevention: α = .77
Mohammadkhani *et al.* (2009) •Iran	1. Conflict Tactic Scales- Revised (CTS-2) 2. Personal and Relationships Profile Marital Attitude Survey	O.1. Coerced anal sex	Immediate relational SRH resource	Married women (17-58 years)	1. Validated elsewhere (α = .87); has been used previously in Iran 2. α = .6 - 0.69
Morokoff *et al.* (1997) •USA	Sexual Assertiveness Scale (SAS)	O.1. Sexual assertiveness	Individual agency	Women from university and community populations	1. α = .77, .71, .83, .75 (subscales: Initiation, Refusal, Pregnancy-STD Prevention, and Total, respectively)
Nanda, Schuler, and Lenzi (2013) •Tanzania	1. GEM Scale 2. Household decision-making scale 3. Attitudes towards wife	O.1. Contraceptive use	Immediate relational agency, Individual agency	Husband and wife pairs (15-49 years)	1. Validated elsewhere 2 - 4. Not reported

Author & Country	Scale	Outcome of Interest	Level	Study Pop	Validation
	refusing sex scale 4. Attitudes toward wife scale				
Pulerwitz & Barker (2007) •Brazil	Gender-Equitable Men (GEM) Scale	O.1. Attitude toward gender norms	Individual agency	Young men (15-24 years)	α = .85, .77 (inequitable and equitable norms, respectively)
Pulerwitz *et al.* (2002) •USA	Sexual Relationship Power Scale (SRPS) (subscales: relationship control, decision making dominance)	O.1. Safe sex negotiations	Immediate relational agency	Women (18-45 years)	α = .84
Stephenson, Bartel, & Rubardt (2012) •Ethiopia, Kenya	L.1. GEM Scale L.2. Sexual and Reproductive Power Scale (SRPS) (questions from)	O.1. Contraceptive use	Immediate relational agency, Individual agency	Rural men and women (18- 45 years)	Validated elsewhere
Upadhyay *et al.* (2014) •USA	Reproductive Autonomy Scale	O.1. Reproductive autonomy	Individual agency	Women attending family planning clinics (15-49 years)	α = .78

How existing reproductive empowerment measures links to Reproductive Empowerment Conceptual Framework

As described above, our reproductive empowerment framework conceptualizes reproductive empowerment as expressed in three key ways: SRH decision-making; leadership in SRH; and SRH collective action as expressions of reproductive empowerment. Results from the literature review of reproductive empowerment measurement. suggest that of these, decision-making has received by far the most attention in the literature that focuses on reproductive outcomes. We found four studies that created scales of decision-making as a main independent variable (Abada & Tenkorang, 2012; Nanda et al., 2013; OlaOlorun & Hindin, 2014), one of which was validated in the study population (Abada & Tenkorang, 2012). Eight other studies incorporated decision-making as a sub-domain of a broader construct (Brezsnyak & Whismas, 2004). While some scales directly attempted to measure sexual and reproductive health decisions (Abada & Tenkorang, 2012; Hogan et al., 1999; Pulerwitz et al., 2002), most measured decision-making across two or more subject areas, including household, financial, health care, contraceptive use, and sexual and reproductive decision-making (Al Riyami &

Afifi, 2003; Al Riyami et al., 2004; Corroon et al., 2014; Do & Kurimoto, 2012; Moonzwe Davis et al., 2014; OlaOlorun & Hindin, 2014).

Unlike SRH decision-making, our review findings do not include scales related to leadership in SRH or SRH collective action. This is likely due the fact that most studies on empowerment and family planning focus on individual agency and agency within intimate partnerships (i.e. immediate relational agency). In contrast, leadership in SRH and SRH collective action reflect agency at the community or broader social and political level (i.e. distant relational agency). While community mobilization, a concept related to collective action and leadership, has been measured and used in studies of HIV and female sex workers (Blanchard et al., 2013; Kerrigan et al., 2015; Swendeman, Basu, Das, Jana, & Rotheram-Borus, 2009), scales representing these concepts have not yet been adapted in the family planning literature.

Finally, our review includes studies that used scales or sub-scales measuring individual level resources, such as self-efficacy (Do & Fu, 2011; Galavotti et al., 1995; Ha et al., 2003; Harvey et al., 2006) and immediate relational resources, such as quality of SRH decision-making (Abada & Tenkorang, 2012; Hogan et al., 1999; Pulerwitz et al., 2002), reproductive coercion (Agardh et al., 2011; Falb et al., 2014; McGuire & Barber, 2010), and violence (Ansara & Hindin, 2009, 2010; Mohammadkhani et al., 2009; Smylie et al., 2013; Wingood & DiClemente, 2000). Although our review does not include studies using scales that measure the distant relational resources of political and legal frameworks related to SRH; health systems culture; or the physical and economic environment; it does include a validated scale measuring gender norms. The Gender-Equitable Men (GEM) scale was used in three articles (Nanda et al., 2013; Pulerwitz & Barker, 2007; Stephenson et al., 2012). While the GEM scale measures individuals' equitable and inequitable attitudes around gender roles, results from community and clinic-based studies using the GEM scale reflect broader gender norms prevalent within a sub-population; the GEM scale represents the distant relational level.

Gaps in measuring reproductive empowerment

While substantial literature documents efforts to measure empowerment more broadly, our review of the literature around reproductive empowerment specifically points to several gaps in measurement that future research should seek to address.

In North America (mainly the U.S.), there was a strong focus on examining "self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes" (e.g. (Auslander, Baker, & Short, 2012; Corroon et al., 2014; Crosby et al., 2000; Galavotti et al., 1995), whereas "shared sexual and reproductive decision-making" and "freedom from violence" were more commonly measured in studies conducted in sub-Saharan Africa. The cross-cultural applicability of measures and domains is limited, and **reproductive empowerment measures developed in one context should, if relevant, be tested in other contexts.** Simultaneously, researchers must bear in mind that empowerment is context-specific, in both place and time, and adaptation of measures from one culture or region to another is not always appropriate. For example, in South Asia women's freedom of movement in public places is often limited, yet freedom of mobility may be less of issue in the sub-Saharan African context where it is much less restricted (Heckert & Fabic, 2013).

- In linking existing measures to the reproductive empowerment conceptual framework, the previous sections highlight a **gap in existing measures in two key domains of the expression of reproductive empowerment: leadership in SRH and SRH collective action**. Very little research has been conducted examining these expressions of empowerment, despite the role that each may play in shaping local services, policy and programming. As others have argued (e.g. Cross, Woodall, & Warwick-Booth, 2017), the conceptual and measurement focus on individual empowerment this reflects greatly hinders our ability to fully understand the collective transformational outcomes that can result from increasing empowerment (such as influencing policy, allocation of resources, or simply the way services are offered).

- We found that **very few studies from this review measured long-term outcomes**. For example, unmet need for family planning, which is a long-term outcome, was included as a measure in only one study (Al Riyami, Afifi & Mabry (2004) in this review. On the other hand, contraceptive prevalence rate and consistent condom use were more commonly reported outcomes. The preference to measure some outcomes over others may be due to the complexity in measuring indicators such as unmet need. Additionally, outcome selection bias may be tied to funding sources. For example, many HIV prevention studies tend to focus on measuring condom use and decision-making and/or negotiation.

- Our review found inconsistent or weak association between reproductive empowerment variables and reproductive health outcomes such as modern contraceptive use (Galavotti et al., 1995). Several studies reported significant positive *and* negative findings, depending upon the measure used and the level of the measure (e.g., individual or community-level). For instance, Agardh and colleagues found sexual coercion was associated with a greater number of sexual partners among women however, it was not associated with inconsistent condom use (Agardh et al., 2011). In a study by Brezsnyak & Whisman (2004), in a sample of 60 couples, findings indicated that marital satisfaction was significantly associated with sexual desire, but there was no evidence for the moderating effects of various forms of marital power. These varying results underscore the **need to better understand the indicators that best approximate reproductive empowerment in each study setting** (Upadhyay & Karasek, 2012). Furthermore, traditional multivariable regression techniques may not be particularly well suited to measure indirect effects or factors that are co-determined, such as empowerment and reproductive health outcomes. Examining these complex relationships may benefit from different analytic methods, such as structural equation modeling, which provide the ability to estimate relationships between unobserved constructs (e.g. latent variables, such as reproductive empowerment) from observable variables.

- Findings from the review also point to a **lack of reproductive empowerment measures for unmarried women, couples and males**. Most studies in this review included only currently married women. None of the reviewed studies included never-married women or women in other types of relationships, such as those with multiple partners or women in plural marriages. The inclusion of unmarried women in subsequent studies could shed light on the potential moderating influence of relationship status between reproductive empowerment and sexual and reproductive health outcomes. We also found few studies that included couples (n= 5) or male perspectives (n=6) on reproductive empowerment of women. One study using data from interviews with matched couples in the 2001 Nepal DHS found that the

association between women's autonomy and health-care-service use may be underestimated when only women's reports are considered (Allendorf, 2007). Furthermore, partner communication about sex, desired family size, and contraception are often of poor quality or nonexistent, with clear implications for reproductive empowerment. Both men and women may fail to achieve their childbearing goals when there is a lack of communication and negation. Using measures that collect information from both partners provides the opportunity to assess the level of couple concordance regarding reproductive intentions.

- Studies that **specifically measure reproductive empowerment among adolescent girls and boys** are also lacking. Our review yielded three studies of girls and/or boys as young as 13 years of age (Crosby et al., 2000; Jaruseviciene et al., 2014; Murphy, Mann, O'Keefe, & Rotheram-Borus, 1998); however, very few studies indicated taking into account the different developmental stages of adolescent girls and boys for applying age-appropriate measures of reproductive empowerment. To accurately measure young adolescents' reproductive empowerment, age-appropriate measures are needed. Utilizing existing measures of reproductive empowerment that were developed for respondents who are sexually active may not be appropriate for adolescents, particularly for adolescents who have not reached puberty or sexual initiation.

- An additional gap this review highlights is **the reliance on cross-sectional data to measure reproductive empowerment**, which was the case for the majority of the studies included in this review. While scholars agree on the dynamic nature of reproductive empowerment as a "process" that cuts along the life course trajectory (Chen, 1992; Kabeer, 2001; Oxaal, Baden, & Institute of Development Studies (Brighton, 1997) most studies from this review cannot account for changes overtime. Only one study used three waves of data to measure spousal communication in family planning in Nepal, and authors were able to measure a shift in power over time, where households with men making decisions about family planning were more likely to be using a contraceptive method in 1994, but less likely to be using one by 1999 (Sharan & Valente, 2002). Longitudinal data is necessary to provide information on causality.

- Finally, while there is virtually universal consensus on the importance of structural factors (e.g., policies, laws, economics, educational and health care system, gender inequality) in shaping reproductive empowerment, **there have been relatively few attempts to measure empowerment at the distant-relational level**. Although WE-MEASR and other approaches attempt to measure social or community norms, which is a significant advance on approaches focused on individuals, more needs to be done to effectively capture and include the influence of meso-level influences.

CONCLUSION

Reproductive decisions and outcomes have implications for individuals, families and communities that are profound and long-term, making understanding the role of agency and empowerment in shaping these particularly important. Confusion over what the components of reproductive empowerment are and the resulting lack of clarity around how to measure these has greatly hindered our collective ability to effectively take steps to enhance empowerment in the reproductive sphere and thus improve the lives of millions of men and women worldwide.

The conceptual framework presented in this paper, along with the review of existing measurement approaches, have several implications for research and implementation. The emphasis placed in this model on understanding reproductive empowerment as an inherently relational concept, where empowerment is both determined and expressed in the context of specific relationships, highlights the need to better understand the characteristics of these relationships. More attention should be paid to examining the resources individuals may draw on to enhance their voice, power and choice in that specific context, and how these may be enhanced. In doing so, it is critical that researchers and implementers also consider the multi-level nature of relationships and apply the understanding of the relational approach beyond interpersonal relationships to include the relationships individuals have with other social actors at the distant relational level, including institutional actors such as medical or political systems. This will allow for a more rigorous assessment of the resources individuals may draw on in these types of interactions and a more complete understanding of how different levels of social interaction influence each other. Finally, the centrality of voice, power and choice to the model as key components of both agency and overall reproductive empowerment suggest that measures of reproductive empowerment and the outcomes that it can be expected to influence should explicitly take these into account.

The review of existing measures of empowerment suggests that the conceptual issues discussed above are, perhaps unsurprisingly, reflected in the way that reproductive empowerment has been measured to date. The narrow focus on decision-making at the expense of leadership and collective action in reproductive health matters, the emphasis on short-term outcomes that are often not fully reflective of voice, power and choice, and the use of proxy measures for empowerment all have contributed to a lack of clarity around what the underlying concept being measured is or how this can be expected to relate to specific outcomes. Reviewing these measurement approaches considering the need to be sure to capture each of voice, power and choice will be critical to better understanding reproductive empowerment and what outcomes may be expected to be influenced by it. This implies focusing first on measuring empowerment and understanding what an empowered outcome may be in each situation and secondly on how this influences specific outcomes. For example, both use and non-use of contraception may be the result of an empowered decision, depending on individual preferences, implying a more complex relationship between empowerment and contraceptive use than is typically assumed in the research field. Framing this question in light of the level of meaningful and satisfactory engagement in decisions that individuals have, which is consistent with the conceptual model developed here, is critical to disentangling this complexity and helping drive more informed programmatic approaches to truly enhancing empowerment in the reproductive sphere.

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APPENDIX A. LITERATURE REVIEW SEARCH TERMS.

TERMS: ((((((((((marriage) OR reproductive) OR reproduction) OR fertility) OR "birth spacing") OR birth spacing) OR "family planning") OR contraception) OR ((Abortion, Induced[Mesh]) OR induced abortion))) AND ((((((((empowerment) OR ((("Power (Psychology)"[Mesh]) OR "personal autonomy"[Mesh]) OR autonomy)) OR decision making) OR "decision making") OR coercion) OR choice) OR choices) OR gender norms) AND (((((((measure*) OR measure) OR measurement) OR measures) OR measuring) OR scales) OR survey*))

APPENDIX B. ARTICLES INCLUDING REPRODUCTIVE EMPOWERMENT MEASURES

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Abada & Tenkorang (2012)	1. Household decision-making autonomy 2. Sexual decision-making autonomy	To determine the extent of a woman's decision-making abilities	O.1. Unwanted or mistimed pregnancy	Immediate relational agency	1. Couple communication and negotiation 2. Shared sexual and reproductive decision making	Married Filipino women; pregnant or given birth in the last 5 years	1. α = .857 2. α = .804	Philippines	L.1. Measure may capture attitude rather than actual decision-making behavior L.2. Husband views were based on wife reports L.3. Cross-sectional design L.4. Limited generalizability
Agardh, Odberg-Pettersson, Ostergren (2011)	Experience of sexual coercion	To determine if respondents were being forced to participate in unwanted sexual situations	O.1. Sexual coercion	Immediate relational agency	1. Freedom from violence and coercion	Undergraduate men and women at Mbarara University of Science & Technology	Validated in previous studies (Sweden)	Uganda	L.1. Not validated in study population L.2. Cross-sectional design L.3. Does not capture sexual

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
									debut L.4. Selection bias
Agrawal *et al.* (2014)	Gender-based power: 1. wife's autonomy 2. husband's inequitable gender attitudes	To measure gender-based power and assess power within relationships	O.1. Couple's HIV Risk	Immediate relational, Individual agency	1. Level of interpersonal control across various domains 2. Couple communication and negotiation	Male/female couples in North India	1. α = .70- .90 1. α = .30 - .90	India	L.1. Cross-sectional design L.2. Self-reported measures L.3. Limited generalizability
Al Riyami, Afifi & Mabry (2004)	Women's empowerment: 1. Involvement in decision-making 2. Freedom of movement	To assess the level of empowerment in women	O.1. Unmet need for modern contraception	Individual agency	1. Level of interpersonal control across various domains	Married Omani women (15-49 years)	Cronbach's alphas not reported but said to be satisfactory	Oman	L.1. Only 2 domains measuring empowerment L.2. Cross-sectional design
Al Riyami & Afifi (2003)	Women's empowerment (decision-making,	To assess the level of empowerment in women	O.1. Fertility	Individual agency	1. Level of interpersonal control across various domains	Omani women ages 15-49	1. α = .56 2. α = .82	Oman	L.1. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	freedom of movement)								L.2. Limited generalizability
Ansara & Hindin (2009)	1. Conflict Tactics Scale	1. To assess intimate partner violence	O.1. Prevalence of violence (psychological, physical, sexual)	Immediate relational agency	1. Freedom from violence and coercion	Women who were either married or living with a partner	Not reported	Philippines	L.1. No info on validated in study pop L.2. Self-reported measures L.3. Cross-sectional design
Ansara & Hindin (2010)	1. Conflict Tactics Scale 2. Emotional & financial abuse	1 & 2. To assess intimate partner violence	O.1. Formal and informal health seeking behavior	Immediate relational agency; Distant relational agency	1. Freedom from violence 2. Supportive social networks and family members	Heterosexual women and men (15+ years)	Not reported	Canada	L.1. No info on validated in study pop L.2. Self-reported measures L.4. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Auslander, Baker & Short (2012)	1. Body Esteem Scale for Adolescents and Adults (BESAA) 2. Sexual Assertiveness Scale for Women (SAS)	1. To determine body esteem based on three subscales: Appearance, Weight Satisfaction; Attribution 2. Measures degree to which women initiate sex based on 3 subscales: Initiation, Refusal, STD/Pregnancy prevention	Sexual assertiveness	Individual agency	Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes	College students; women (18 - 24 years)	Validated in current study; comparative to results from other studies in same age group Appearance: $\alpha = .89$ Weight Satisfaction: $\alpha = .91$ Attribution: $\alpha = .69$ Initiation: $\alpha = .77$ Refusal: $\alpha = .76$ STD/Pregnancy Prevention: $\alpha = .77$	United States (Texas)	L.1. Cross-sectional, no causal link between esteem and assertiveness L.2. Limited generalizability outside college-educated 18-24 year olds

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Bond & Bond (2004)	1. Marital Satisfaction Inventory Revised 2. Partner Abuse Scale-Physical, Physical Abuse of Partner Scale 3. Relationship Questionnaire 4. Experiences in Close Relationships Scale	1. Identify nature of marital distress 2. Measure self-reports of physical and non-physical abuse between partners 3. Measures attachment in relationships 4. Measure adult romantic attachment	O.1. Intimate Partner Violence	Immediate relational agency	1. Freedom from violence and coercion	Heterosexual, married or cohabiting couples	1. α = .79 2. α > .90 3. Test-retest reliability .49 -- .71 4. α = .80	Canada	L.1. Limited generalizability L.2. Self-reported measures L.3. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Brezsnyak & Whisman (2004)	1. Sexual Desire Towards Partner Scale 2. Quality of Marriage Index 3. Marital Power: Decision-making section of Who Does What questionnaire; Desired Changes Questionnaire	1. Assess the degree of sexual desire toward one's partner 2. Measure relationship satisfaction 3. Assess distribution of decision-making and power within a couple	O.1. Marital satisfaction	Immediate relational agency	1. Healthy and pleasurable relationships 2. Shared sexual and reproductive decision making	Heterosexual couples	α = .87, .89 (husbands, wives) α = .88 (husbands & wives) α = > .65 for CRITCS	United States (CO)	L.1. No causal links between sexual desire and marital satisfaction L.2. Not generalizable to unmarried couples or groups with greater ethnic or socioeconomic diversity L.3. Cross-sectional design
Corroon *et al.* (2014)	Women's empowerment (subscales: attitudes towards domestic violence, partner prohibition,	The role of gender empowerment on reproductive health outcomes in urban Nigeria	O.1. Family planning use O.2. Maternal health behaviors (presence of skilled birth attendance,	Individual agency	1. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes	Nigerian women (15-49 years)	Not reported	Nigeria	L.1. Most empowerment measures developed for South Asia and not fully adapted for Africa L.2. Not

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	equitable decision-making		institutional delivery)		2. Fertility awareness?				generalizable to single women L.3. Cross-sectional design
Crosby *et al.* (2000)	1. Unprotected vaginal sex index 2. Scale on personal barriers to condom use 3. Pregnancy worry scale 4. Risky sexual behavior scale	1. Determine number of unprotected vaginal sex acts (6 months) 2. Assess adolescents' perception of condoms and sexual pleasure 3. Assess adolescent worry about pregnancy 4. Determine extent of risky sexual	O.1. Unprotected vaginal sex	Immediate relational agency, Individual agency	1. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes 2. Fertility awareness 3. Freedom from violence and coercion	African American female adolescents (14 – 18 years)	1. Not reported 2. $\alpha = .80$ 3. $\alpha = .71$ 4. $\alpha > .70$	United States	L.1. Validity of self-reported measures L.2. Cross-sectional design limits causality

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
		behavior in relationships							
Do & Kurimoto (2012)	Women's empowerment (economic, socio-cultural, familiar, inter-personal)	To assess the level of empowerment in women	O.1. Contraceptive use	Individual agency	1. Level of interpersonal control across various domains	Women (15-49 years)	α = .60 to .86 for subscales and total measure	Ghana, Namibia, Uganda, Zambia	L.1. Limited data to measure empowerment L.2. Self-report, social desirability bias L.3. Cross-sectional design
Falb *et al.* (2014)	Lifetime reproductive coercion	To measure experience of intimate partner violence for women	O.1. Lifetime reproductive coercion	Relational agency	1. Freedom from violence and coercion	Women (18+)	α = .89	Cote d'Ivoire	L.1. Cross-sectional design L.2. Limited generalizability L.3. IPV and coercion may be underreported

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Galavotti *et al.* (1995)	Decisional Balance and Self-efficacy Scales for contraceptive use	1. Determine women's ability to weigh pros and cons of contraceptive use 2. Determine women's confidence in using contraceptives	O.1. Contraceptive use	Individual agency	1. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes	Women at high risk for HIV infection and transmission	α = >.8 for both scales	United States (CA, OR, PA)	L.1. Limited generalizability L.2. No causal link between self-efficacy, decisional balance, and stage of change L.3. Cross-sectional design
Greig & Koopman (2003)	1. Condom Use 2. Negotiating Power 3. Economic Independence 4. Alcohol Consumption 5. HIV Status Awareness 6. Cultural Norms 7. Barriers to	1. Measure frequency of condom use 2. Measure degree to which respondent felt she could discuss sexual history and safe sex with partner 3. Measure degree to which women	O.1. HIV Prevalence O.2. Condom use	Immediate relational agency, Individual agency	1. Couple communication and negotiation 2. Shared sexual and reproductive decision making 3. Level of interpersonal control across various domains 4. Critical reflection on social norms and	Sexually active women in Gaborone	1. α = .71 2. α = .58 3. α = .80 4. α = .67 5. α = .84 6. α = .51 7. α = .51 8. α = .77	Botswana	L.1. Small sample size L.2. Convenience sampling L.3. Cross-sectional design L.4. Self-reported measures

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	Condom use 8. Abuse	rely on partners for economic support 4. Frequency alcohol use 5. HIV testing history 6. Gender norms in decision making 7. Assess perceptions of whether request for condom would result in partner being unfaithful, distrustful 8. Tendency to have sex due to physical abuse			attitudes related to SRHR				

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Griffin-Carlson & Schwanenflugel (1998)	1. Family Adaptability and Cohesion Scale 2. Parent Adolescent Communication Scale	1. Assess degree to which family members are emotionally connected 2. Measures communication between parents and adolescents (subscales: Open Family Communication; Problems in Family Communication)	O.1. Quality of parental involvement (following notification of adolescent's decision to have abortion)	Distant relational agency	1. Supportive social networks and family members	Pregnant, unmarried adolescents (<18 years) who had chosen abortion as solution to unwanted pregnancy	1. α = .83-.87 (cohesion); α = ..78-.80 (adaptability) (validated elsewhere) 2. α > .75 for both subscales	United States	L.1. Cross-sectional design L.2. Limited generalizability
Guedes *et al.* (2015)	Childbearing Motivations Scale	To determine both positive and negative childbearing motivations that influence reproductive behaviors	O.1. Positive and negative child bearing motivations	Individual agency, Immediate relational agency, Distant relational agency	1. Healthy and pleasurable relationships 2. Shared sexual and reproductive decision making 3. Supportive social networks and family members	Portuguese men and women (19-49 years)	1. α > .85 for all subdimensions	Portugal	L.1. Limited generalizability L.2. Need to evaluate test-retest reliability

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
					4. Critical reflection of norms and attitudes related to SRHR 5. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and intentions 6. Fertility awareness				L.3. Cross-sectional design
Ha, Jayasuriya, and Owen (2003)	1. Men's Decisional balance in wives' IUD use 2. Men's self-efficacy in contraceptive use	1. Determine men ability to weigh pros and cons of contraceptive use 2. Determine men's confidence in using contraceptives	O.1. (Men's) readiness to accept modern contraceptive method	Individual agency	1. SRHR knowledge 2. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires	Married men (19–45 years) living with their wives	1. $\alpha > .70$ 2. $\alpha = .75$	Vietnam	L.1. Limited generalizability L.2. Self-reported measures L.3. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Harvey *et al.* (2006)	Condom use intentions	Determine women's condom use intentions based on 5 subscales: attitudes; self-efficacy (Condom Use Self-Efficacy Scale); condom norms; partner specific perceived vulnerability to HIV; HIV information	O.1. Condom use intentions	Individual agency	1. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes	Women (18-25 years) with male partners; sex without condom in last 3 months, and met at least 1 of 10 risk criteria (p701)	Confirmatory factor analysis to test model; structural equation modeling (SRMR =.06)	United States (CA, OK)	L.1. Measures intentions to use, not condom use behavior L.2. No causal link L.3. Limited generalizability
Hogan, Berhanu, & Hailemariam (1999)	Women's involvement in domestic decision-making scale	To assess women's autonomy via their ability to make decisions	O.1. Contraceptive behavior O.2. Contraceptive knowledge	Immediate relational agency	1. Shared sexual and reproductive decision-making	Married, fecund women (15-49 years)	Not reported	Ethiopia	L.1. Cross-sectional design L.2. Self-reported measures L.3. Limited generalizability

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Hortacsu (1999)	1. Feelings for spouse 2. Feelings for family 3. Interaction with network 4. Division of Labor 5. Decision making 6. Issues of conflict 7. Conflict resolution	Together, scales aimed to gather information on relationships within network, marital functioning, and feelings for spouse	O.1. Spousal feelings	Immediate relational agency, Individual agency, Distant relational agency	1. Level of interpersonal control across various domains 2. Couple communication and negotiation 3. Supportive social networks and family members	Couple-initiated married couples in Ankara	1. α = .87 - .92 2. α = .56 - .89 3. α = .67 - .81 4. α = 57 - .92 5. α = .52 - .92 6. α = .68 - .88 7. Not reported	Turkey	L.1. Limited generalizability L.2. Self-reported measures L.3. Cross-sectional design
Jarusevicie ne *et al.* (2014)	Attitudes toward Women Scale for Adolescents (AWSA)	Assess gender attitudes among adolescents	O.1. Adolescent sexual behavior	Individual agency	1. Critical reflections about social norms and attitudes related to SRHR	High school boys and girls (aged 14-18 years) in Bolivia & Ecuador	Entire sample: α = .61 Bolivia: α = .62 Ecuador: α = .60	Bolivia; Ecuador	L.1. Limited generalizability L.2. Some items did not show good fit, should be retested for validity, reliability L.3. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Levy, Otis, Samson, Pilote & Fugere (1997)	1. Motivations for risk-taking behavior 2. Sexual self-efficacy scale 3. Domination by partner scale 4. Personal initiatives scale 5. Communication styles	Together, to examine interpersonal power relations on contraceptive and sexual behaviors		Immediate relational agency, Individual agency		French-speaking college students	1. α = .77 2. α = .78 3. α = .53 4. α = .60 5. α = .65	Canada	L.1. Limited generalizability L.2. Self-reported measures L.3. Did not include other measures of empowerment
McGuire & Barber (2010)	1. Risk reduction index 2. Sexual coercion 3. Psychological Well-being	1. To assess behaviors taken to reduce the risk of STDS/pregnancy 2. Determine experience of coercion or pressure for sex 3. To	O.1. Sexual risk reduction behavior O.2. Sexual coercion	Individual agency	1. Level of interpersonal control across various domains 2. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires	Men and women ages 20-21	1. Not reported 2. α = .64 3. α = .85, .81, .77, .76, .82, .68 (subscales respectively)	United States (MI)	L.1. Limited generalizability to other ethnic groups L.2. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
		measure well-being (subscales: Self-esteem; Depressed Mood; Social Isolation; Social Anxiety; Anger; Coping)							
Mohammadkhani *et al.* (2009)	1. Conflict Tactic Scales-Revised (CTS-2) 2. Personal and Relationships Profile Marital Attitude Survey	1 & 2`. To assess intimate partner violence	O.1. Coerced anal sex	Immediate relational agency	1. Freedom from violence and coercion	Married women (17-58 years)	1. Validated elsewhere (α = .87); has been used previously in Iran 2. α = .6 - 0.69	Iran	L.1. Cross-sectional design L.2. Self-reported measures L.3. Limited generalizability

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Moonzwe Davis *et al.* (2014)	1. Women's Empowerment Scale (subscales: decision-making, control over sexual relations; freedom of movement/mobility) 2. Pregnancy-health related scale	1. Determine women's level of empowerment 2. Determine health status during pregnancy	O.1. Self-reported general health status O.2. Self-reported health status during pregnancy	Individual agency	1. Level of interpersonal control across various domains	Married women in marginalized areas of Mumbai	1. $\alpha = .82$	India	L.1. Limited generalizability L.2. Self-reported measures L.3. Cross-sectional design
Morgan, Chapar & Fisher (1995)	1. Life Events Checklist 2. Multi-dimensional Health Locus of Control Scale 3. Self-Perception Profile for Adolescents	Together, to assess psychosocial variables associated with teenage pregnancy	O.1. Risk of becoming pregnant	Individual agency	1. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive desires and outcomes	Unmarried, sexually active adolescent girls (15 - 21 years) on Long Island	Not reported	United States (NY)	L.1. Limited generalizability L.2. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Morokoff *et al.* (1997)	Sexual Assertiveness Scale (SAS)	Measure sexual assertiveness in women	O.1. Sexual assertiveness	Individual agency	1. Critical reflections about social norms and attitudes related to SRHR 2. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive health desires and intentions 3. Freedom from violence and coercion	Women from university and community populations	1. α = .77, .71, .83, .75 (subscales: Initiation, Refusal, Pregnancy-STD Prevention, and Total, respectively)	United States	L.1. Limited generalizability L.2. Self-reported measures, social desirability L.3. Cross-sectional design
Murphy *et al.* (1998)	Pregnancy outcome expectancy index	To gauge social expectations of telling others they are pregnant	O.1. Pregnancy outcome expectancies O.2. Knowledge of consequence of HIV	Individual agency	1. SRHR knowledge 2. Fertility awareness	HIV-infected young women (13–24 years). In LA, SF, Miami, NY	1. α = .65	United States	L.1. Small sample size L.2. Convenience sampling L.3. Cross-sectional design L.4. Low internal consistency

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Nanda, Schuler & Lenzi (2013)	1. GEM Scale 2. Household decision-making scale 3. Attitudes towards wife refusing sex scale 4. Attitudes toward wife scale	To assess gender norms in husbands compared to wives	O.1. Contraceptive use	Immediate relational agency, Individual agency	1. Critical reflections about social norms and attitudes related to SRHR 2. Freedom from violence and coercion	Husband and wife pairs (15-49 years)	1. Validated elsewhere 2 - 4. Not reported	Tanzania	L.1. Limited generalizability L.2. Cross-sectional design L.3. Small sample
OlaOlorun & Hindin (2014)	Decision making power scale	To determine the extent of a woman's decision-making abilities	O.1. Use of any modern contraceptive method	Immediate relational agency	1. Level of interpersonal control across various domains 2. Shared sexual and reproductive decision making	Nigerian women (35-49 years)	Did PCA but α not reported	Nigeria	L.1. Limited generalizability L.2. Cross-sectional design
Otto-Salaj *et al.* (2010)	1. AIDS risk behavior knowledge 2. Risk History Survey 3. Condom	Overall, investigate power dynamics in negotiation: 1. Measure knowledge concerning	O.1. Condom use negotiation	Individual agency	1. SRHR knowledge 2. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive	Heterosexual, unmarried, African-American men (18 - 35 years)	1. Not reported, but "good" psychometric properties 2. Not reported, but good in other	United States	L.1. Simulated steady relationship L.2. Limited generalizability

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	Attitudes Scale	risk practices and risk-reduction steps 2. Assess sexual practices and substance abuse 3. Assess attitudes towards condom use			desires and outcomes		study 3. α = .70		L.3. Cross-sectional design
Pulerwitz & Barker (2007)	Gender-Equitable Men (GEM) Scale	To measure attitudes towards gender norms in men	O.1. Attitude toward gender norms	Individual agency	1. Critical reflections about social norms and attitudes related to SRHR	Young men (15-24 years)	α = .85, .77 (inequitable and equitable norms, respectively)	Brazil	L.1. Need test-retest reliability in the same group L.2. Limited generalizability L.3. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Pulerwitz *et al.* (2002)	Sexual Relationship Power Scale (SRPS) (subscales: relationship control, decision making dominance)	To measure power within sexual relationships	O.1. Safe sex negotiations	Immediate relational agency	1. Couple communication and negotiation 2. Healthy and pleasurable relationships 3. Shared sexual and reproductive decision making	Women (18-45 years)	α = .84	USA (MA)	L.1. Cross-sectional design L.2. Limited generalizability
Rankin-Esquer, Burnett, Baucom, & Epstein (1997)	1. Autonomy and Relatedness Inventory (ARI) 2. Inventory of Specific Relationship Standards 3. Dyadic Adjustment Scale (DAS)	1. Assess perceived partner behavior on dimensions of in/dependence, love/hostility 2. Measure the standards that spouses hold for the relationship 3. Measure of relationship	O.1. Autonomy O.2. Relatedness	Immediate relational agency	1. Couple communication and negotiation 2. Healthy and pleasurable relationships	Married couples	1. α = .72 - .78 (relatedness); α = .70 - 80 (autonomy), women, men respectively 2. Not reported 3. No reported	United States	L.1. Limited generalizability L.2. Self-reported measures L.3. Cross sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
		adjustment for couples							
Renaud & Byers (2006)	1. Sexual Cognitions Checklist 2. Child Sexual Abuse Questionnaire 3. Sexual Experience Survey Revised 4. Marlowe-Crowne Social Desirability Scale	1. Determine the frequency of certain sexual cognitions and whether they were positive or negative 2. Assess sexual experiences prior to age 11 3. Assess men's use of sexual coercion toward women 4. Assess social desirability of behaviors, traits, attitudes	O.1. Experience of sexual violence	Immediate relational agency, Individual agency	1. Healthy and pleasurable relationships 2. Freedom from violence and coercion	Heterosexual undergraduate students	$\alpha > .8$ for positive and negative cognitions for both men and women Not reported for others	Canada	L.1. Limited generalizability L.2. Self-reported measures L.3. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Sharan & Valente (2002)	Spousal communication index (5 items)	To determine strength of spousal communication in family planning decision-making	O.1. Contraceptive use	Immediate relational agency	1. Couple communication and negotiation	Women and husbands across 3 regions	α = .75, .73, .64 (Waves 1, 2, 3)	Nepal	L.1. Pre-campaign exposure dilute effects
Smylie *et al.* (2013)	Sexual Health Indicator Survey (subscales: physical well-being; mental well-being; emotional well-being; social well-being; approaches to sexuality; sexual relationships; sexual experiences; discriminatio	Measure sexual health among 16-24 year olds	O.1. Positive and negative indicators of sexual health	Immediate relational agency, Individual agency	1. Critical reflections about social norms and attitudes related to SRHR 2. Self-efficacy to express, negotiate, and carry out one's sexual and reproductive health desires and intentions 3. Freedom from violence and coercion	Men and women (16-24 years)	1. α = .79 - .90 for all subscales	Canada	L.1. Purposive sampling, limited generalizability L.2. Cross sectional design, could not test stability of responses over time

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	n, coercion, violence								
Snell & Wooldridge (1998)	1. Sexual Awareness Questionnaire 2. Contraceptive Behavior Scale 3. Attitudes Towards Condoms Scale 4. Zuckerman Human Sexuality	1. Assess sexual consciousness, sexual monitoring, and sexiness consciousness 2. Measure effective, reliable contraceptive behavior 3. Measure attitudes towards	O.1. Contraceptive use O.2. Attitudes towards condom use	Individual agency	1. Critical reflections about social norms and attitudes related to SRHR	Undergraduates (16-25 years) at small midwestern university	1. α = .79 - .92 2. α = .83 3. α = .93 4. α = .93	United States	L.1. Limited generalizability L.2. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	Questionnaire	condoms 4. Measure cumulative sexual experience							
Sowell, Phillips & Misener (1999)	1. Overall motivator for having baby scale 2. Motivators for having a baby 3. Deterrents for having a baby	1. To measure motivation for having a baby in HIV-positive women (subscales: motivators and deterrents)	O.1. Perception of HIV infection risk in baby O.2. Motivation to have a baby	Individual agency	1. Fertility awareness 2. Self-efficiacy to express, negotiate, and carry out one's sexual and reproductive desires and behaviors	HIV positive, African American women (19-45 years) in SC & GA	1. $\alpha = .84$ 2. $\alpha = .83$ 3. $\alpha = .72$	United States (SC, GA)	L.1. Small sample size L.2. Convenience sampling L.3. Cross-sectional design
Stephenson, Bartel, and Rubardt (2012)	L.1. GEM Scale L.2. Sexual and Reproductive Power Scale (SRPS)	To measure attitudes towards gender norms, power and equity in relationships	O.1. Contraceptive use	Immediate relational agency, Individual agency	1. Critical reflections about social norms and attitudes related to SRHR 2. Freedom from violence and coercion 3. Couple	Rural men and women (18 - 45 years)	Validated elsewhere	Ethiopia, Kenya	L.1. Small sample sizes across strata L.2. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	(questions from)	among men and women			communication and negotiation 4. Healthy and pleasurable relationships 5. Shared sexual and reproductive decision making				
Upadhyay *et al.* (2014)	Reproductive Autonomy Scale	To measure level of reproductive autonomy in women	O.1. Reproductive autonomy	Individual agency	1. Level of interpersonal control across various domains	Women attending family planning clinics (15-49 years)	α = .78	USA (19 locations)	L.1. Limited generalizability L.2. Need further testing (confirmatory factor analysis, item response modeling) L.3. Cross-sectional design
Wingood & DiClemente (1998)	1. HIV Risk Behavior Knowledge 2. Partner Abuse 3. Sexual assertiveness	1. HIV Risk Behavior Knowledge 2. Partner Abuse 3. Assertiveness	O.1. Non-condom use	Immediate relational agency, Individual agency	1. Couple communication and negotiation 2. Shared sexual and reproductive decision making 3. Level of	Heterosexual African American women (18-29 years), low SES	1. α = .65 2. α = .80 3. α = .77 4. α = .84 5. α = .75	United States (CA)	L.1. Limited generalizability L.2. Self-reported measures L.3. Small sample size

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
	4. Condom use skills 5. Partner resistance to using condoms 6. Promiscuity beliefs 7. Interpersonal impact	in demanding partner uses condom 4. Condom use skills 5. Partner resistance to using condoms 6. Beliefs that women who carry and use condoms are looking for sex 7. Women's appreciation of partner for suggesting using condoms			interpersonal control across various domains 4. Critical reflection on social norms and attitudes related to SRHR 5. Freedom from violence and coercion		6. $\alpha = .74$ 7. $\alpha = .76$		L.4. Cross-sectional design

Author	Scale	Uses	Outcome of Interest	Level	Sub-domains	Study Pop	Validation	Country	Limitations
Zlokovich & Snell (1997)	1. Illusion of Fertility Control Scale 2. Relationship Scales Questionnaire (RSQ) 3. Contraceptive Behavior Scale	Together, to examine contraceptive behavior: 1. Measure illusion of fertility control at respondent's most recent intercourse 2. Measure attachment styles 3. Measure contraceptive reliability	O.1. Contraceptive behavior	Immediate relational agency, Individual agency	1. Fertility awareness 2. Health and pleasurable relationships	College students (16-24 years)	1. α = .69 - .76 for subscales 2. Not reported 3. α = .83	United States	L.1. Self-selected sample, limited generalizability L.2. Self-report

APPENDIX C. EXAMPLES OF SCALE AND ITEMS

Author & Country	Scale	Items
Ansara & Hindin (2009) •Philippines	1. Modified Conflict Tactics Scale	**Physical aggression:** Did they or their husband ever - 1. Throw something at their partner? 2. Push, grab, or shove their partner? 3. Hit their partner? 4. Hit their partner with something hard? **Psychological aggression:** Did they or their husband ever - 1. Yell or insult the other 2. Swear 3. Stomp out of the room8. Throw or smash something
Ansara & Hindin (2010) •Canada	1. Conflict Tactics Scale 2. Emotional & financial abuse	Did partner perpetrate any of the following acts? 1. Threaten to hit you with his/her fist or anything else that could have hurt you? 2. Thrown anything at you that could have hurt you? 3. Pushed, grabbed, or shoved you in a way that could have hurt you? 4. Slapped you? 5. Kicked you, bit you, or hit you with his/her fist? 6. Hit you with something that could have hurt you? 7. Beat you? 8. Choked you? 9. Used or threatened to use a gun or knife on you? 10. Forced you into any unwanted sexual activity, by threatening you, holding you down, or hurting you in some way?
Auslander, Baker & Short (2012) •USA	1. Body Esteem Scale for Adolescents and Adults (BESAA)	Not reported in study, but SAS questions reported elsewhere - **Initiation:** 1. I begin sex with my partner if I want to.

Author & Country	Scale	Items
	2. Sexual Assertiveness Scale for Women (SAS)	2. I let my partner know if I want my partner to touch my genitals. 3. I wait for my partner to touch my genitals instead of letting my partner know that's what I want. **Refusal:** 1. I give in and kiss if my partner pressures me, even if I already said no. 2. I put my mouth on my partner's genitals if my partner wants me to, even if I don't want to. 3. I refuse to let my partner touch my breasts if I don't want that, even if my partner insists **Pregnancy – STD Prevention:** 1. I have sex without a condom or latex barrier if my partner doesn't like them, even if I want to use one. 2. I have sex without using a condom or latex barrier if my partner insists, even if I don't want to.
Mohammadkhani *et al.* (2009) •Iran	1. Conflict Tactic Scales- Revised (CTS-2) 2. Personal and Relationships Profile Marital Attitude Survey	Not reported in study; items from Straus *et al.* (1996) – Sexual Coercion Scale Items 1. Made my partner have sex without a condom. 2. Insisted on sex when my partner did not want to (but did not use physical force). 3. Insisted my partner have oral or anal sex (but did not use physical force). 4. Used force (like hitting, holding down, or using a weapon to make my partner have oral or anal sex. 5. Used force (like hitting, holding down, or using a weapon to make my partner have sex. 6. Used threats to make my partner have oral or anal sex. 7. Used threats to make my partner have sex.
Morokoff *et al.* (1997) •USA	Sexual Assertiveness Scale (SAS)	**Initiation:** 1. I begin sex with my partner if I want to. 2. I let my partner know if I want my partner to touch my genitals. 3. I wait for my partner to touch my genitals instead of letting my partner know that's what I want. 4. I wait for my partner to touch my breasts instead of letting my partner know that's what I want. 5. I let my partner know if I want to have my genitals kissed. 6. Women should wait for men to start things like breast touching.

Author & Country	Scale	Items
		Refusal: 1. I give in and kiss if my partner pressures me, even if I already said no. 2. I put my mouth on my partner's genitals if my partner wants me to, even if I don't want to. 3. I refuse to let my partner touch my breasts if I don't want that, even if my partner insists **Pregnancy – STD Prevention:** 1. I have sex without a condom or latex barrier if my partner doesn't like them, even if I want to use one. 2. I have sex without using a condom or latex barrier if my partner insists, even if I don't want to. 3. I make sure my partner and I use a condom or latex barrier when we have sex.
Nanda, Schuler & Lenzi (2013) •Tanzania	1. GEM Scale 2. Household decision-making scale 3. Attitudes towards wife refusing sex scale 4. Attitudes toward wife scale	**GEM Scale examples: (agree or disagree)** 1. There are times a woman deserves to be beaten 2. Men need sex more than women do 3. A real man produces a male child 4. A woman's role is taking care of her home and family **HH Decision-making scale:** Who do you think should have a greater say in the following? 1. Making large household purchases 2. Making small daily household purchases 3. Deciding when to visit family, friends, or relatives 4. Deciding what to do with money the woman earns from her work 5. Deciding how many children to have and when to have them? **Attitudes towards wife refusing sex scale:** Is a wife justified in refusing to have sex with her husband/partner when 1. She suspects her husband has a STD 2. She suspects her husband has sex with women other than his wife 3. She has recently given birth within the last 6 weeks and has not fully recovered

Author & Country	Scale	Items
		4. She is tired and not in the mood **Attitudes towards wife beating:** Is a husband justified in beating his wife if 1. She goes out without telling him 2. She neglects the children 3. She argues with him 4. She refuses to have sex with him 5. She burns the food
Pulerwitz & Barker (2007) •Brazil	Gender-Equitable Men (GEM) Scale	**Inequitable Gender Norms:** 1. It is the man who decides what type of sex to have. 2. A woman's most important role is to take care of her home and cook for her family. 3. Men need sex more than women do. 4. You don't talk about sex, you just do it. 5. Women who carry condoms on them are "easy." 6. A man needs other women, even if things with his wife are fine. 7. There are times when a woman deserves to be beaten. 8. Changing diapers, giving the kids a bath, and feeding the kids are the mother's responsibility. 9. It is a woman's responsibility to avoid getting pregnant. 10. A man should have the final word about decisions in his home. **Equitable Gender Norms:** 1. A couple should decide together if they want to have children. 2. In my opinion, a woman can suggest using condoms just like a man can. 3. If a guy gets a woman pregnant, the child is the responsibility of both. 4. A man should know what his partner likes during sex. 5. It is important that a father is present in the lives of his children, even if he is no longer with the mother. 6. A man and a woman should decide together what type of contraceptive to use.

Author & Country	Scale	Items
		7. It is important to have a male friend that you can talk about your problems with.
Pulerwitz *et al.* (2002) •USA	Sexual Relationship Power Scale (SRPS) (subscales: relationship control, decision making dominance)	**Relationship Control:** 1. If I asked my partner to use a condom, he would get violent. 2. If I asked my partner to use a condom, he would get angry. 3. Most of the time, we do what my partner wants to do. 4. My partner won't let me wear certain things. 5. When my partner and I are together, I'm pretty quiet. **Decision-Making Dominance:** 1. Who usually has more say about whose friends to go out with? 2. Who usually has more say about whether you have sex? 3. Who usually has more say about what you do together? 4. Who usually has more say about how often you see one another? 5. Who usually has more say about when you talk about serious things?
Stephenson, Bartel & Rubardt (2012) •Ethiopia, Kenya	L.1. GEM Scale L.2. Sexual and Reproductive Power Scale (SRPS) (questions from)	**Equitable Attitudes adapted from GEM:** 1. Men need sex more than women do 2. You don't talk about sex, you just do it 3. It is a woman's responsibility to avoid getting pregnant 4. A man should have the final word about decisions in his home 5. Men are always ready to have sex **Balance of Power adapted from SRPS:** 1. My partner has more say than I do about important decisions that affect us 2. I am more committed to this relationship than my partner is 3. A woman should be able to talk openly about sex with her husband 4. My partner dictates who I spend time with

Author & Country	Scale	Items
		5. When my partner and I disagree, she/he gets her/his way most of the time
Upadhyay *et al.* (2014) •USA	Reproductive Autonomy Scale	**Freedom from Coercion:** 1. My partner has stopped me from using a method to prevent pregnancy when I wanted to use one. 2. My partner has messed with or made it di cult to use a method to prevent pregnancy when I wanted to use one. 3. My partner has made me use a method to prevent pregnancy when I did not want to use one. 4. If I wanted to use a method to prevent pregnancy my partner would stop me. 5. My partner has pressured me to become pregnant. **Communication:** 1. My partner would support me if I wanted to use a method to prevent pregnancy. 2. It is easy to talk about sex with my partner. 3. If I didn't want to have sex I could tell my partner. 4. If I was worried about being pregnant or not being pregnant I could talk to my partner about it. **Decision-making:** 1. Who has the most say about whether you use a method to prevent pregnancy? 2. Who has the most say about which method you would use to prevent pregnancy? 3. Who has the most say about when you have a baby in your life? 4. If you became pregnant but it was unplanned, who would have the most say about whether you would raise the child, seek adoptive parents, or have an abortion?
CARE International (2014)	Self-Efficacy Social Capital	1. How sure are you that you could express your opinion at a community meeting? 2. How sure are you that you could express your opinion at a community meeting if some people did not agree with that opinion?

Author & Country	Scale	Items
		3. How sure are you that you could express your opinion at a community meeting if most people did not agree with that opinion? **Social cohesion:** 1. The majority of people in this community can be trusted. 2. The majority of people in this community generally get along with each other. 3. I feel that I am really a part of this community. 4. I can rely on people in my community if I need to borrow money. For more examples see: http://familyplanning.care2share.wikispaces.net/file/view/WE-MEASR_Tool_Final.pdf

APPENDIX D: LIST OF ATTENDEES AT NOVEMBER 2016 EXPERT MEETING

Name	Organization
Abby Cannon	MEASURE Evaluation
Allison Mobley	Johns Hopkins University
Amy Pennington	BMGF
Anita Raj	UCSD
Anju Malhotra	UNICEF
Arzum Ciloglu	Johns Hopkins University
Carolina Mejia	MEASURE Evaluation
Christina Maly	JHPIEGO
Christina Wegs	CARE
Christine Galavotti	CARE
Doris Bartel	CARE
Janine Bardon-O'Fallon	MEASURE Evaluation
Jeff Edmeades	ICRW
Joan Kraft	USAID
Julie Newton	KIT | Gender
Julie Pulerwitz	Population Council
Kerry MacQuarrie	DHS
Lauren Van Enk	IRH
Linda Sussman	USAID
Lydia Murithi	ICRW
Madeleine Short	USAID
Margaret Greene	Greeneworks
Michal Avni	USAID
Michelle Hindin	Johns Hopkins School of Public Health/WHO
Nicole Haberland	Population Council
Rebecka Lundgren	IRH

Sarah Baird	George Washington University
Sid Schuler	FHI360
Sunita Kishor	DHS
Tim Shand	IRH
Ushma Upadhyay	UCSF
Victoria Jennings	IRH