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Constructs of power and equity and their association with contraceptive use among men and women in rural Ethiopia and Kenya

Rob Stephenson\textsuperscript{a*}, Doris Bartel\textsuperscript{b} and Marcie Rubardt\textsuperscript{b}

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Using samples of reproductive aged men and women from rural Ethiopia and Kenya, this study examines the associations between two scales measuring balances of power and equitable attitudes within relationships and modern contraceptive use. The scales are developed from the Sexual and Reproductive Power Scale (SRPS) and Gender Equitable Male (GEM) scale, which were originally developed to measure relationship power (SRPS) among women and gender equitable attitudes (GEM) among men. With the exception of Ethiopian women, a higher score on the balance of power scale was associated with significantly higher odds of reporting modern contraceptive use. For men and women in both countries, a higher score on the equitable attitudes scale was associated with significantly higher odds of reporting modern contraceptive use. However, only the highest categories of the scales are associated with contraceptive use, suggesting a threshold effect in the relationships between power, equity and contraceptive use. The results presented here demonstrate how elements of the GEM and SRPS scales can be used to create scales measuring balances of power and equitable attitudes within relationships that are associated with self-reporting of modern contraceptive use in two resource-poor settings. However, further work with larger sample sizes is needed to confirm these findings, and to examine the extent to which these scales can be applied to other social and cultural contexts.

Keywords: power; equity; contraceptive use; scales; Africa

Introduction

The focus of previous literature on the role of gender relations in shaping sexual and reproductive health has been on issues of couple communication around sex, reproduction and family planning (Biddlecom and Fapohunda 1998, Hogan et al. 1999, Gupta 2000, Muia et al. 2000, Becker and Costenbader 2001), and on male opposition to family planning (Bawah et al. 1999, Collumbien and Hawkes 2000). More recently, research efforts have begun to focus specifically on issues of power and control within relationships, and the extent to which these are created by the comparative characteristics of men and women, and through gender-stereotyping around gender norms and expectations. Such studies have examined how individual perceptions of control within relationships are linked to sexual and reproductive health outcomes, arguing that women who feel they have less control in their
relationship have less ability to negotiate for the successful achievement of their sexual and reproductive goals (Li 2004, Pettifor et al. 2004). Similarly, other studies have argued that social and structural support for inequitable gender norms negatively influence sexual and reproductive health behaviours, by supporting the male dominance of the female partner (Cohen and Burger 2000, Pulerwitz and Baker 2008). However, relatively little research has been conducted in resource-poor settings to examine how these issues of power, control and inequity are associated with contraceptive use; the few studies that do exist have focused largely on the female perspective (Dunkle et al. 2004, Pettifor et al. 2004). This study examines whether two scales measuring power and equity, derived from two existing scales – the Sexual and Reproductive Power Scale (SRPS) (Pulerwitz et al. 2000) and the Gender Equitable Male (GEM) scale (Pulerwitz and Baker 2008) – are associated with the self-reporting of contraceptive use among men and women in rural Ethiopia and Kenya. This study illustrates how separate scales measuring balances of power and equity can be used to collect data from both men and women in the same setting, and the extent to which these scales are associated with the self-reporting of contraceptive use.

Background

Power in sexual relationships is defined as a combination of ‘power to’ and ‘power over’, and refers to the ability of one partner to control actions within a relationship, in terms of their ability to dominate decision-making, control their partner, engage in actions against their partner’s wishes and to effectively act independently of the relationship (Riley 1997, Blanc 2001, Pulerwitz et al. 2002). Blanc (2001) notes that it is the comparative power within a relationship that is most influential in shaping sexual and reproductive health outcomes: when there is an imbalance in power in a relationship, one partner can assert their sexual and reproductive health goals, potentially leading to negative outcomes for their partner (e.g., unwanted pregnancy). Imbalances in power within sexual relationships often favour males. Such imbalances arise from social and cultural expectations around male and female roles, characteristics and behaviours (Gupta 2000, Blanc 2001), and thus, such imbalances are often deeply embedded in cultural ideals around gendered behaviours.

Wingood and DiClemente (2000) extend on Connell’s (1987) Theory of Gender and Power, and propose mechanisms through which power in relationships may influence health outcomes. Connell (1987) proposed that power in relationships is comprised by three parts working simultaneously to describe the power balance in a dyad: division of labour, division of power and the structure of social norms. Wingood and DiClemente (2000) build on this to define power as ‘having the power to act or change or having power over others’, thus when power inequity between men and women favours men, women will be more likely to experience adverse health outcomes. In terms of sexual health outcomes, many previous studies have examined how such imbalances in power influence condom use. When women lack the power to act or change a sexual situation, self-efficacy for condom use is diminished (Wingood and DiClemente 2000, Woolf and Maisto 2008). In addition, women in relationships characterised by power imbalance may feel the need to adopt a submissive role, and are less likely to attempt to negotiate for condom use for fear of retribution (Wyatt and Rierdale 1994, Sanders-Philips 2002). Wight (1992) notes that
gender role stereotyping often places the responsibility for contraceptive use on women, and when women also experience a power inequity with their male partner, this inequity becomes a significant barrier to their ability to adopt contraception. Thus, women who experience less power in their relationship may be less likely to participate in decisions about condom use, or contraceptive use, and may face more difficulty in enacting their desires around safer sex and contraception (Bruhin 2003, Harvey and Bird 2004, Woolf and Maisto 2008).

The balance of power within a relationship can affect sexual and reproductive health outcomes in one of, or a combination of, three ways (Blanc 2001). Firstly, an imbalance in power – with more power afforded to the male partner – may directly influence a woman’s ability to achieve her own sexual and reproductive health goals by limiting her access to information and her ability to negotiate the circumstances around sexual activity and fertility (e.g., condom use or contraceptive adoption). Secondly, an imbalance of power may influence sexual and reproductive health through associations with increased risk of gender-based violence. An imbalance of power may take the form of male control over female mobility or decision-making: Gage and Hutchinson (2006), in a study from Haiti, demonstrate increased perpetration of intimate partner violence among men who also demonstrate other controlling behaviours. The perpetration of male–female violence within a relationship is an extreme example of the use of power to control a partner, and much has been written about the detrimental sexual and reproductive health consequences of experiencing both physical and sexual violence within a relationship (Campbell 2002, Krug et al. 2002, Stephenson et al. 2006a, Stephenson et al. 2008). Women who experience violence from their male partners are less likely to adopt contraception (Stephenson et al. 2006a), more likely to have an unwanted pregnancy (Stephenson et al. 2008) or a negative birth outcome (Ahmed et al. 2006, Koenig et al. 2010), and experience more gynaecological symptoms (Stephenson et al. 2006b). Thirdly, power imbalances may also influence sexual and reproductive health outcomes through limiting the ability for women to access sexual and reproductive health services, due to limited mobility, access to financial resources and decision-making created by their subjugated position in the relationship. For example, Stephenson et al. (2006a, 2008) demonstrates the constraining effect of experiencing intimate partner violence on a woman’s use of family planning services, a result of the power held by the husband to control his wife’s contraceptive use by both actual violence and the threat of violence. In addition, Dunkle et al. (2004), in a study of women in South Africa, report that women who experienced violent or controlling behaviours were at an increased risk of HIV seropositivity, demonstrating the negative health effects of male dominance in relationships.

There is currently no standardised conceptualisation or measurement of power in relationships. Many previous studies have focused on single domains of relationship power, e.g., decision-making or control over resources. Studies that have focused on decision-making as a proxy for power have examined decision-making around economic and fertility decisions, mobility outside of the home and participation in social activities (Govindasamy and Malhotra 1996, Abdel-Tawab et al. 1997, Hogan et al. 1999, Mason and Smith 2000). Other studies have used indicators of a woman’s empowerment, and have categorised these as access to social capital that may increase empowerment (e.g., education), factors that may set the foundation for higher levels of empowerment (e.g., literacy of other household members) and
evidence of empowerment (e.g., financial control or decision-making) (Kishor 2000, Blanc 2001). Other proxy measures for relationship power often measure the relative characteristics of the partners in a dyad, for example, spousal age difference, differences in educational attainment (Riley 1997, Wolff et al. 2000), or the circumstances around the formation of the partnership, for example, payment of dowry/bride wealth or woman's participation in selection of her spouse (El Zanaty et al. 1996, Blanc 2001).

The SRPS developed by Pulerwitz et al. (2000) uses a 23-item scale to measure the multi-dimensional nature of power in relationships. Developed and tested for female Latina populations in the USA, the scale includes elements of decision-making and relationship control. Drawing on both the Theory of Gender and Power (Connell 1987) and the Social Exchange Theory (Emerson 1981), the SRPS measures how gender-based structural inequalities are manifested in individual relationships (Pulerwitz et al. 2000). The SRPS has been shown to be significantly inversely associated with physical relationship violence (Pulerwitz et al. 2000, Dunkle et al. 2004) and significantly positively associated with consistent condom use in samples of women (Jewkes et al. 2002, Pulerwitz et al. 2002).

However, these measurements of relationship power largely capture the female perspective, and measurements to capture men’s perceptions of relationship power are scarce (Blanc 2001). The GEM scale was developed to examine male perceptions of gender norms related to sexual relations, violence, and sexual and reproductive health (Pulerwitz and Barker 2008). Developed and validated among young men (15–24) in Brazil, the scale proved to be associated with lower levels of partner violence and more contraceptive use (Pulerwitz and Barker 2008).

While previous studies have largely examined the association between constructs of power and equity and reproductive and sexual health outcomes from a single-gender perspective, this study uses data collected from samples of rural Ethiopian and Kenyan reproductive aged men and women, to examine how male and female self-reported attitudes towards power and equity are associated with the reporting of modern contraceptive use. This study illustrates the use of two scales to measure the balance of power and equitable attitudes within a relationship, derived from existing commonly used scales for measuring associations between power, equity and contraceptive use in two resource-poor settings. An understanding of how power and equity can be measured using standardised scales across genders and contexts has implications for the collection of data on gender perceptions and attitudes in large-scale population-based surveys.

**Study setting**

The research took place in two countries: Ethiopia and Kenya. The research was part of a larger initiative to investigate family planning behaviour in two countries in which CARE currently has ongoing programmatic activities. The countries were chosen based on CARE’s perceived programmatic needs, and the research presented here was an opportunistic addition to their ongoing programmatic efforts. In Kenya, the data collection took place in Siaya, one of the 12 divisions that comprise Nyanza Province. The current contraceptive prevalence rate in Siaya is approximately 25% (Central Bureau of Statistics et al. 2004). In Ethiopia, the data collection took place in two districts: West Hararghe and East Hararghe, in the Oromiya region where the
current contraceptive prevalence rate is 15% (Central Statistical Agency (Ethiopia) and ORC Macro 2006).

Data and methods
The Results Initiative Project is aimed at improving contraceptive use in Ethiopia and Kenya. Briefly, the project aims to encourage contraceptive use through two key pathways: the provision of quality family planning services and activities aimed at increasing gender equity in the community. The data for the current analysis come from the ‘Results Initiative Baseline Data’ (RIBD), which were collected by CARE and Emory University in 2009. The RIBD were collected to provide baseline measures of fertility, contraceptive use, and fertility intentions and attitudes among samples of rural men and women (aged 18–45) in Kenya and Ethiopia. Ethical approval was provided by the Emory University Institutional Review Board.

The same data collection instruments were used in all study settings, allowing a comparison of indicators across contexts. A household survey was conducted with a target sample of 600 women and 300 men in each country. Respondents for the survey were married men and women between the ages 18 and 45; because the questionnaire included data on attitudes towards gender-based violence, separate samples of married men and women were drawn, thus the data do not represent couples, but two independent samples of men and women from the same villages. A similar sampling system was used in each study setting. The sampling frame for the household survey was comprised of a list of all administrative units in each district in each of the study settings. For each district (in Ethiopia, East Hararghe and West Hararghe are considered one district for ease of explanation), 30 administrative units were randomly selected. Each of the 30 administrative units selected contained more than one village. Thus, two villages were then randomly selected from each administrative unit, to provide a total sample of 60 villages per country. Within each village, approximately 10 women and 5 men were interviewed. Women were interviewed by female interviewers and men by male interviewers. The final sample sizes were 300 men and 520 women in Ethiopia and 310 men and 655 women in Kenya.

The questionnaire for the household survey was adapted from the Demographic and Health Survey Model B questionnaire – for use in low contraceptive prevalence countries (ORC Macro 2001). The questionnaire included sections on background demographic characteristics, fertility and family planning behaviours, attitudes toward family planning, and perceptions of community norms around fertility, family planning and gender roles. Both male and female respondents were asked if they were currently using any method to prevent or delay pregnancy; those answering yes were asked the current method or methods they were using. In Ethiopia, interviews were conducted in Oromifa and in Kenya interviews were conducted in Luo. Survey tools were translated from English to the appropriate local language by in-country translators known to CARE. Translations were checked for accuracy twice: program staff consulted with translators to ensure that the meanings of each of the questions were not changed during translation, and during the training process for the data collectors, each question was reviewed in English and the local language to ensure consistency of meaning.
A unique element of the questionnaire was the inclusion of a 26-item scale aimed at measuring attitudes towards gender roles and expectations, and relationship factors including sex, sexuality and decision-making. The questions for the scale were taken from the GEM (Pulerwitz and Barker 2008) and the SRPS (Pulerwitz et al. 2000). The GEM scale has previously been adapted and validated for use with men in Ethiopia (Middlestadt et al. 2007). The SRPS has been found to be internally consistent and to be negatively correlated with physical violence and positively correlated with condom use among Latina women in the USA (Pulerwitz et al. 2000). The SRPS has also been shown to be associated with intimate partner violence among urban African-American and Latina girls, with high levels of power associated with lower levels of violence (Teitelman et al. 2008). In addition, the SRPS has been used in several studies in South Africa where higher levels of power have been shown to be associated with more condom use (Jewkes et al. 2002) and lower levels of intimate partner violence (Dunkle et al. 2004).

The current study aimed to collect data on attitudes towards gender norms and relationship dynamics among samples of both men and women, thus it was decided to use elements from the GEM and the SRPS to create two new scales. Simply combining the two scales would have resulted in too many questions, and would have combined the differing concepts of power and equity, thus it was decided to use questions from each of the GEM and SRPS, and to ask each of these questions of both men and women. The selection of items was based primarily on discussions with experts in studies of gender, sexual and reproductive health and in-country programme staff. The focus of the programme was to increase contraceptive uptake, thus items that were related to fertility decisions, childcare and sexual activity were selected from each of the indices. The remaining items were chosen to reflect more general power over decision-making in relationships (e.g., ‘my partner dictates who I spend time with’). The questions were phrased as statements (Table 1) and the word ‘partner’ was used in the power scale questions to allow both men and women to reply in reference to his/her spouse.

Six items were selected for use from the SRPS scale to create a perceived balance of power scale (Table 1); items were chosen to capture attitudes towards decision-making, partner control, comfort in discussing family planning and degree of commitment to the relationship. An additional question ‘I feel comfortable discussing HIV with my partner’ was added to the scale to mirror the existing question ‘I feel comfortable discussing family planning with my partner’. Sixteen items were selected from the GEM scale to form the equitable attitudes scale. The items were chosen to capture attitudes towards sexual behaviour, violence, domestic work and decision-making.

Possible responses for each of the statements were yes or no; the original scales used Likert scale responses (1–5 for strongly agree to strongly disagree). However, in field testing the scales proved difficult for respondents to distinguish between the responses, and thus the instrument was switched to a binary yes or no response for each scale item. Responses to each of the items were coded such that the more equitable answer received one, and an inequitable answer received zero. For the creation of the equitable attitudes scale, this was a straightforward process. For example, for the question ‘A man can hit his wife if she will not have sex with him’, those answering yes received zero. For the question ‘A couple should decide together if they want to have children’ those answering yes received one. Thus, when the items
for each scale were added together, a higher score on the equity scale indicated more perceived equity in a relationship. The conceptualisation of the balance of power scale was slightly more complex. In its original form, the SRPS questions were asked of women only, and thus referred to women’s perceived power in their relationship. However, the questions in this context were asked the same for both men and women. Thus, for each question, the answer reflecting the most equitable balance of power was coded as one. For example, for the question ‘My partner has more say than I do about important decisions that affect us’, a yes answer was coded as zero, and a no answer as one, and for the question ‘I am more committed to this relationship than my partner is’ a yes was coded as a zero and a no as one. The balance of power scale thus measures the perceived balance of power in the relationship, with a higher score representing a perception of more equal balance of power in the relationship, not the amount of absolute power that each individual feels they hold.

Data analysis for the data was conducted using STATA. After respondents with missing data were removed, the final analysis samples were: 292 Ethiopian men,
467 Ethiopian women, 304 Kenyan men and 650 Kenyan women. Missing data were present for a range of variables (most commonly age and education). The focus of the analysis was on the association between the perceived balance of power and equitable attitudes scales and self-reported contraceptive use; separate analyses were conducted for men and women in each country. We refer to contraceptive use as 'self-reported' since in cultural settings of high expected fertility and gender stratification there is the potential for the misreporting of contraceptive use due to stigma surrounding fertility control. We thus test the associations between the balance of power and equitable attitudes scales and the reporting of contraceptive use in a survey. A binary outcome variable was coded one if the respondent reported use of a modern contraceptive method (oral pill, injection, IUD, condom, male or female sterilisation) at the time of the survey. The small sample sizes and the relatively low prevalence of contraceptive use prevent an examination of the associations between the scales and individual contraceptive methods. Two logistic regression models are fitted for contraceptive use for each gender and country. In the first model, the key covariates of interest are the balance of power and equitable attitudes indices, entered as continuous variables. In the second model, the key covariates of interest are the balance of power and equitable attitudes indices entered as separate categorical variables; the balance of power and equitable attitudes indices are categorised into thirds. Each model controls for factors previous literature has shown to be influential in shaping contraceptive use: age, parity, education and employment.

**Results**

Figures 1 and 2 show the distribution of responses to the balance of power and equitable attitudes scales among rural Ethiopian and Kenyan men and women. Table 2 shows the distribution of the power and equitable attitudes scores by gender and country and Table 3 shows the distribution of the indices by contraceptive use. There are substantial differences in reporting on the balance of power scale between countries. In Ethiopia, men report significantly higher scores on both the balance of

![Figure 1. Distribution of balance of power scale responses by gender and country. X-axis = score on balance of power scale.](image-url)
power ($p = 0.012$) and equitable attitudes ($p = 0.011$) scales than women. In Kenya, men report significantly higher scores on the equitable attitudes scale ($p = 0.045$) than women, but not on the balance of power scale ($p = 0.164$). Kenyan men report significantly higher scores on both scales than Ethiopian men (power $p = 0.021$, equity $p = 0.001$). The same pattern exists for women, with Kenyan women reporting significantly higher scores on both scales (power $p = 0.001$, equity $p = 0.001$). Among Ethiopian men, those who report using contraception report significantly higher scores on the balance of power ($p = 0.023$) and equitable attitudes scales ($p = 0.014$) than contraceptive non-users. Among Ethiopian women, those who report using contraception report significantly higher scores on the equitable attitudes scale ($p = 0.021$). These relationships were not seen for Kenyan men or women.

Table 4 shows the adjusted odds ratios (OR) of the associations between the balance of power and equitable attitudes scales and self-reported current contraceptive use. When used as a continuous variable, the balance of power scale among Ethiopian men and Kenyan men and women was positively associated with current contraceptive use [Ethiopian men OR: 1.64 (95% CI: 1.19, 2.25), Kenyan men OR: 1.21 (95% CI: 1.04, 1.41) and Kenyan women OR: 1.11 (95% CI: 1.03, 1.18)]. When used as a continuous variable, the equitable attitudes scale was positively associated with contraceptive use among Ethiopian men [OR: 1.13 (95% CI: 1.05, 1.34)], Kenyan men [OR: 1.45 (95% CI 1.07, 2.17)] and Kenyan women [OR: 1.10 (95% CI: 1.03, 1.18)]. When used as a categorical variable, Ethiopian men who reported a high score on the balance of power scale had four times greater odds of reporting contraceptive use than men who reported a low score [OR: 4.51(95% CI: 1.54, 6.89)]. Similarly, Kenyan women and men with high scores on the balance of power scale also had significantly higher odds of reporting contraceptive use [women OR: 2.35 (95% CI: 1.18, 3.99), men OR: 1.23 (95% CI: 1.05, 1.99)]. When used as a categorical variable, Ethiopian women who reported high scores on the equitable attitudes scale had approximately four times greater odds of reporting contraceptive use than
Table 2. Contraceptive use, power and equity scales among rural Ethiopia and Kenyan men and women (18–45).

<table>
<thead>
<tr>
<th></th>
<th>Ethiopian men (n = 292)</th>
<th>Ethiopian women (n = 467)</th>
<th>Ethiopian men versus Ethiopia women</th>
<th>Kenyan men (n = 304)</th>
<th>Kenyan women (n = 650)</th>
<th>Kenyan men versus Kenyan women</th>
<th>Ethiopian men versus Kenyan men</th>
<th>Ethiopian women versus Kenyan women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently using a</td>
<td>38.36</td>
<td>31.14</td>
<td>0.218</td>
<td>29.28</td>
<td>31.54</td>
<td>0.078</td>
<td>0.012</td>
<td>0.215</td>
</tr>
<tr>
<td>modern method of</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>contraception</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power index</td>
<td>3.65 (0, 6)</td>
<td>2.33 (0, 6)</td>
<td>0.012</td>
<td>4.67 (0, 6)</td>
<td>4.36 (0, 6)</td>
<td>0.164</td>
<td>0.021</td>
<td>0.001</td>
</tr>
<tr>
<td>Equity index</td>
<td>9.08 (0, 16)</td>
<td>5.62 (0, 16)</td>
<td>0.011</td>
<td>12.73 (0, 16)</td>
<td>10.11 (0, 16)</td>
<td>0.045</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Power index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>23.29</td>
<td>59.60</td>
<td>0.001</td>
<td>2.96</td>
<td>4.31</td>
<td>0.415</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>Medium</td>
<td>49.66</td>
<td>35.69</td>
<td>0.012</td>
<td>37.83</td>
<td>52.77</td>
<td>0.417</td>
<td>0.023</td>
<td>0.023</td>
</tr>
<tr>
<td>High</td>
<td>27.05</td>
<td>4.71</td>
<td>0.003</td>
<td>59.12</td>
<td>43.88</td>
<td>0.419</td>
<td>0.014</td>
<td>0.015</td>
</tr>
<tr>
<td>Equity index</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>9.93</td>
<td>50.17</td>
<td>0.001</td>
<td>5.59</td>
<td>3.85</td>
<td>0.032</td>
<td>0.015</td>
<td>0.012</td>
</tr>
<tr>
<td>Medium</td>
<td>64.04</td>
<td>48.48</td>
<td>0.001</td>
<td>18.75</td>
<td>52.77</td>
<td>0.027</td>
<td>0.001</td>
<td>0.015</td>
</tr>
<tr>
<td>High</td>
<td>26.03</td>
<td>1.35</td>
<td>0.001</td>
<td>75.66</td>
<td>43.88</td>
<td>0.015</td>
<td>0.001</td>
<td>0.032</td>
</tr>
</tbody>
</table>

Note: *p*-values in italics are significant at the 5% level.
Table 3. Distribution of contraceptive use, power and equity scales among rural Ethiopia and Kenyan men and women (18–45).

<table>
<thead>
<tr>
<th></th>
<th>Ethiopian men (n = 292)</th>
<th>Ethiopian women (n = 467)</th>
<th>Kenyan men (n = 304)</th>
<th>Kenyan women (n = 650)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FP user</td>
<td>Non-FP user</td>
<td>p-value</td>
<td>FP user</td>
</tr>
<tr>
<td>Power index</td>
<td>4.25</td>
<td>3.23</td>
<td>0.023</td>
<td>2.71</td>
</tr>
<tr>
<td>Equity index</td>
<td>10.12</td>
<td>8.44</td>
<td>0.014</td>
<td>6.33</td>
</tr>
<tr>
<td>Power index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>11.61</td>
<td>30.56</td>
<td>0.001</td>
<td>51.89</td>
</tr>
<tr>
<td>Medium</td>
<td>48.86</td>
<td>53.89</td>
<td>0.021</td>
<td>39.96</td>
</tr>
<tr>
<td>High</td>
<td>45.54</td>
<td>15.56</td>
<td>0.001</td>
<td>8.65</td>
</tr>
<tr>
<td>Equity index</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>5.36</td>
<td>12.78</td>
<td>0.001</td>
<td>36.22</td>
</tr>
<tr>
<td>Medium</td>
<td>53.37</td>
<td>70.56</td>
<td>0.015</td>
<td>61.62</td>
</tr>
<tr>
<td>High</td>
<td>41.07</td>
<td>16.67</td>
<td>0.001</td>
<td>2.16</td>
</tr>
</tbody>
</table>

Note: *p*-values in italics are significant at the 5% level.
women who reported low scores [OR: 4.11 (95% CI: 2.12, 6.42)], while Kenyan women, who reported high scores on the equitable attitudes scale were associated with a 24% increase in the odds of reporting contraceptive use relative to women who reported a low score [OR: 1.24 (95% CI: 1.06, 2.17)]. Similarly, Ethiopian men [OR: 2.09 (95% CI: 1.54, 2.52)] and Kenyan men [OR: 3.47 (95% CI: 1.86, 5.21)] who had higher scores on the equitable attitudes scale were significantly more likely to report contraceptive use.

**Discussion**

Previous studies have shown that men who score high on the GEM scale and women who score high on the SRPS scale exhibit more gender equitable sexual and reproductive behaviours (Pulerwitz et al. 2000, Pulerwitz and Barker 2008). The current analysis demonstrates significant associations between two new scales measuring the balances of power and equitable attitudes in relationships, derived from the GEM and SRPS, and self-reporting of contraceptive use in two resource-poor rural sub-Saharan African settings. Although the same questions were asked of both men and women, the distributions of responses varied significantly by both country and gender (Figures 1 and 2). For the balance of power scale, which combined questions relating to the balance of sexual power with more general power in relationships, women in both countries reported significantly lower scores (and hence lower perceived balance of power) than men. Similarly, women reported significantly lower scores on the equitable attitudes scale than men. The difference is particularly striking when the scales are used in categorical form: 26% of Ethiopian men report high levels of perceived equitable attitudes compared to only 1% of Ethiopian women. It is possible that the differences reflect real gender differentials in
power and equity, and that the questions are sensitive in detecting these differences. Alternatively, the gender differences may reflect a social desirability, or social conditioning, bias in which men and women are reporting the perceived correct answer. For men, the perceived correct answer may be towards more gender equitable responses, however, for women, the perceived correct answer may be towards more conservative responses, a result of gender stereotyping. However, it is possible that men may also be gender stereotyped into reporting more conservative responses. Further research is needed using a cognitive interviewing approach with men and women in each study setting to examine what men and women understand by each of the questions, and to examine the mental representations of gender that respondents draw on when answering the questions. Further work could adopt a cognitive interviewing approach to investigate what men and women think are the right answers to the questions, the extent to which these right answers differ from their lived experience, and their mental representations of the content of the scale items.

The SRPS was originally developed to measure associations between relationship power and sexual behaviour; however, of the items selected to form the balance of power scale, only two deal specifically with family planning (measuring comfort in discussing family planning with a partner) or sex (comfort in discussing sex with a partner), and the remaining items deal with other issues of power and control within relationships. With the exception of Ethiopian women, respondents who scored high on the seven-item balance of power scale were significantly more likely to report current contraceptive use. This finding suggests that for some groups, elements of power and control that extend beyond power in sexual activity and negotiation are significantly associated with contraceptive use. This is in line with several previous studies that have demonstrated a link between a greater sense of relationship control and positive sexual health outcomes (Jewkes et al. 2002, Dunkle et al. 2004, Woolf and Maisto 2008).

Similarly, the GEM scale was originally developed to measure men’s gender equitable ideas, and it is interesting to note here that the equitable attitudes scale derived from the GEM scale is associated not only with men’s increased reporting of contraceptive use, but also with the reporting of contraceptive use among Kenyan women. Interestingly, with the exception of the association between the balance of power scale and contraceptive use among Kenyan women, only the top categories of the scales are associated with contraceptive use, suggesting a threshold effect in the relationships between power, equity and contraceptive use.

The lack of a significant association between the balance of power scale and contraceptive use for Ethiopian women is worthy of further investigation. The balance of power scale includes items that relate to control and power within relationships, whereas the equitable attitudes scale includes items that measure various dimensions of equity (childcare, sexual relationships). Perhaps contraceptive use among Ethiopian women is more closely associated with issues surrounding tolerance of violence, household decision-making and ability to initiate sex and condom use than with issues of how a husband controls his wife. Alternatively, the power scale includes only seven items, and many of them may appear abstract when asked in a survey (e.g., ‘I am more committed to this relationship than my partner is’). Perhaps the balance of power scale is too focused to measure issues of power among Ethiopian women, or contains items that are difficult to measure in a population with very low levels of education.
However, there are two important caveats in these findings. First, ideas around gender norms are contextually specific, and while the scales may be capturing a common set of ideals, there may be other local, and potentially more potent, ideals that are not captured here. Before the scales formulated for use in this study can be used in other populations, further qualitative research is needed to understand the extent to which the scales capture local understandings of gender norms and behaviours.

There are several limitations to the current analysis. First, the power calculations for the original study did not take into account differences in contraceptive use across strata of power or equity (as this was not the original intention of the survey), and thus the small sample sizes may have limited the ability to identify significant relationships. In particular, the small sample sizes prevented an examination of associations between power, equity and individual contraceptive methods. For example, it seems plausible that lower perceived levels of balance of power and equitable attitudes among women may have a greater influence on condom use, which requires greater male participation, but not injections, for example. Second, the scales as used here were summative indices created by the addition of the scale items. Factor analysis was attempted, but the resultant scales were not associated with the contraceptive use outcomes, again due to the small sample sizes. The results presented here provide preliminary evidence for the associations between power, equity and contraceptive use. However, larger sample sizes are required to provide a more nuanced investigation of the topic. Future research efforts also need to examine the application of these scales for the collection of data from couples, to allow an identification of the extent of concordance in responses and how differences in responses to these scales among couples are associated with contraceptive use.

Conclusion

The SRPS and GEM scale provide useful tools for measuring relationship power and gender norms, and the results presented here demonstrate how elements of these scales can be used to create scales to measure perceived balance of power and equitable attitudes that are associated with self-reporting of contraceptive use in two resource-poor settings. The results have several methodological implications and recommendations. First, the scales originally developed separately for men and women can be used to collect data from both and, to varying degrees, these scales are significantly associated with contraceptive use reporting in both men and women. However, further work with larger sample sizes is needed to confirm these findings. Further research is needed to establish which of the domains included in the scales are most closely related to contraceptive use reporting among men and women: this process may also help produce a shorter, more concentrated scale that can be incorporated into existing data collection tools. The results here provide compelling evidence for associations between power and equity scales derived from previously validated GEM and SRPS scales and self-reporting of contraceptive use. The results also provide evidence for the ability to use shortened versions of the GEM and SRPS scales for both men and women to measure the balance of power and equitable attitudes. From a programmatic perspective, the scales presented here have several important implications. The scales allow the separation of the domains of power and equity, and the extent to which each is separately associated with contraceptive use.
In the case presented here, programmatic efforts could focus on increasing equity, rather than power, as a means of increasing contraceptive use among Ethiopian women. The scales also show a threshold effect, allowing the targeting of programmatic efforts towards men and women who are characterised as low power or equity based on the scale elements.

References


