Spousal violence: A Mokken Scaling Analysis of Attitudes of South Asian Men and Women

ABSTRACT

Attitudes towards intimate partner violence are usually explored by asking participants to respond to some statements describing various instances or situations. Currently, we do not know if responses to such questions or statements are random, leading to a total score which is hard to compare between respondents, or in a hierarchical manner which makes such comparison much more meaningful. The study was conducted to explore the structure of an 'attitudes to intimate partner' violence scale used in the Demographic Health Survey, for a hierarchy of items according to the criteria of Mokken scaling.

Secondary analyses of the data related to attitudes to intimate partner violence of South Asian men and women, collected by the Demographic Health Survey from Pakistan, India, Bangladesh, Maldives and Nepal between 2006- 2014. A strong Mokken scale was apparent in the data with intimate partner violence by men being most justified in cases where the wife neglected the children and least endorsed in the case of refusing to have sex. Men and women endorsed the items in the same order, but some inter-country differences were apparent.

Keywords: intimate partner violence, wife beating, Mokken scaling, attitudes,

INTRODUCTION

Intimate partner violence (IPV), also known as domestic violence or 'wife beating' is a major public health and social care problem affecting millions of people globally (Ali, Naylor, Croot, & O'Cathain, 2014; Clark, Silverman, & Shahrouri, 2010). IPV refers to any behaviour within an intimate relationship that causes physical, psychological or sexual harm and/or subjects the affected person to coercive controlling behaviour (Ali, Dhingra, & McGarry, 2016a; World Health Organisation, 2013). The World Health Organization (WHO) estimates that more than 30% of women worldwide experience either physical or sexual IPV every year (Devries et al., 2013; Stöckl et al., 2013). The prevalence of IPV varies between countries ranging from 23.3% in high-income countries to 37.7% in low-income countries. While it is recognized that IPV exists in heterosexual as well as same sex relationship (Dank, Lachman, Zweig, & Yahner, 2014; Renzetti & Miley, 2014) and that women can also perpetrate IPV against their male partners (Hilton, Popham, Lang, & Harris, 2014; White & Dutton, 2013), the number of women experiencing IPV, sustaining serious injuries (Caldwell, Swan, & Woodbrown, 2012; Howarth, Feder, Howard, & Agnew-Davies, 2013) and or losing their lives is much greater than men (Hamberger & Larsen, 2015). The literature suggests that men are more likely to experience violence by strangers or acquaintances, whereas, current or ex-partners remain the most common IPV perpetrator for women. It is well recognised that IPV results from a complex interplay of many different factors and people's personal views and attitudes towards IPV and gender specific roles is one such factor. Therefore, to develop strategies to prevent IPV, it is important to understand people's views about IPV.

South Asia is comprised of eight autonomous countries including Sri Lanka, Bangladesh, India, Afghanistan, Pakistan, Bhutan, Nepal, and the Maldives. Most of these countries share socioeconomic, political and cultural characteristics (Dalal, Lee, & Gifford, 2012). Most are affected by poverty and socioeconomic deprivation which affects women more negatively than

men. Men enjoy much more freedom, power and resourcefulness compared with women as the culture holds patriarchal structure and values. Patrilineal and patriarchal culture in the region means that women have to struggle much harder to survive and fulfil their potential. Participation of women in socioeconomic activities remains limited. For instance, women make up less than 5% of the police force and less than 10 % of judges, reflecting the status of women in the region. Patriarchal societal norms weaken the participation of women in decision making activities in private and public spheres. Violence against women and IPV is widespread and often considered and dealt with as a 'private matter' that should be solved within families (Ali, Naylor, Croot, & O'Cathain, 2015; Dalal et al., 2012). While at least five countries (Sri Lanka, India, Nepal and Bangladesh) in the region have laws prohibiting IPV and domestic violence, implementation of these laws is questionable. IPV is considered an appropriate mechanism to discipline wives who are, generally, socially and economically dependent on men (Ali, O'Cathain, & Croot, 2016b; Tayyab, Kamal, Akbar, & Zakar, 2017; Ziaei, Naved, & Ekström, 2014).

Attitudes of people towards IPV are considered an important indicator of acceptance or rejection of IPV (Ali et al., 2016b; Trott, Harman, & Kaufman, 2016). At the same time, men and women's attitudes towards IPV can be used as a proxy for individual's perception of women's status in society. Much research has been conducted to examine IPV and its impact on the victim. Some research has also been conducted to explore men's and women's attitudes towards IPV (Beyer, Wallis, & Hamberger, 2013; Doku & Asante, 2015; Tayyab et al., 2017), though most of this comes from developed countries. Evidence suggests that men who hold traditional views about gender roles are more likely to justify and use IPV, in case they feel neglected or not listened to (Akin & Ozaydin, 2005; Luke, Schuler, Mai, Vu Thien, & Minh, 2007). Simultaneously, women with gender equitable attitudes are more likely to be abused by their intimate partners, as they may appear challenging and/or unwilling to submit to their male

4

partners (Doku & Asante, 2015; Jewkes, Levin, & Penn-Kekana, 2002; Luke et al., 2007). UNICEF (2009) explored attitudes of women towards IPV by means of household surveys in 68 countries covering 39% of the world's population. Data were collected during 2001 to 2008 from women aged 15-49 years, regardless of their marital status or experience of IPV. The questionnaire asked if the husband is justified in hitting or beating his wife in various circumstances which included going out without telling the husband, neglecting the children, arguing with the husband, refusing sex and burning food. Five countries (Egypt, Jordan, Somalia, Tajikistan and Turkmenistan) modified the standard questionnaire to make it more adaptable to their social context and incorporated some other circumstances, including spending too much money, disobeying the husband, being unfaithful, insulting the husband, neglecting household chores, disrespecting in-laws and speaking about the need to protect herself against HIV/AIDS. More than 50% of the women in the survey justified hitting and beating a wife under the various circumstances mentioned above. Neglecting children was identified as the most common reason to justify wife beating. Women living in rural areas, with low level of education and poor economic background were more likely to justify wife beating in various circumstances mentioned above. Level of education, economic status and area of residence was found to be negatively related to attitudes towards IPV. Similar findings were also reported from other various independent studies (Boyle, Georgiades, Cullen, & Racine, 2009; Hindin, 2003; Uthman, Lawoko, & Moradi, 2009).

The WHO (2005) multi-country study also explored attitudes of women towards IPV. Various circumstances where women believed IPV was justified included not completing housework adequately, refusing sex, disobeying their husband and infidelity. Infidelity was identified as the most widely accepted reason. Women living in rural areas were more likely to have an accepting attitude towards IPV than women from urban areas. The study also asked women about circumstances when women have the right to refuse sex; for example, if she is sick, if

she does not want to have sex, if the husband is drunk and if the husband is mistreating her. Most women believed that sex cannot be refused in cases where the woman did not want it. In addition, in the provincial sites of Bangladesh, Peru, the United Republic of Tanzania, Ethiopia and Samoa, between 10-20% of women maintained that they (women) did not have the right to refuse sex under any circumstances (WHO, 2005). Victimised women were more likely to demonstrate accepting attitudes towards IPV than non-victimised women due to the prevalent cultural norms (Fawole, Aderonmu, & Fawole, 2005; Koenig et al., 2003; Speizer, 2010). Evidence also suggests that women also tend to oppose punishment for IPV related aggressive behaviour (Haj-Yahia, 2002; Haj-Yahia & Zaatut, 2015; Horn, Puffer, Roesch, & Lehmann, 2016).

Research has also been conducted to determine men's attitudes towards IPV (Eckhardt, Samper, Suhr, & Holtzworth-Munroe, 2012; McDermott & Lopez, 2013; Uthman et al., 2009; Zakar, Zakar, & Kraemer, 2013). For instance, Gibbison (2007) explored Jamaican male participants attitudes about IPV against their female partner. Nearly 25% (n =184/754) of participants believed that the use of violence was acceptable if the man believed that his partner has had sex with another man. A woman's refusal to have sex (3.2%) and late cooking of supper (2.8%) were two other reasons justifying IPV (Gibbison, 2007). Similar factors have been reported by a few other studies conducted recently (Demirtaş, Hatipoğlu-Sümer, & Fincham, 2016; Okenwa-Emegwa, Lawoko, & Jansson, 2016; Taylor, Xia, & Do, 2017). In addition, research from developing countries, while relatively scarce, suggests that disobedience, infidelity, disrespect for the husband's relatives (Ali et al., 2015; Haj-Yahia, 2003; Uthman et al., 2009), women's deviation from normative roles in society (Hindin, 2003; Kazungu & Chewe, 2003; Koenig et al., 2003; Rani, Bonu, & Diop-Sidibe, 2004) and challenging the husband's authority (Lawoko, 2008) are some reasons justifying IPV against women. Socio-demographic factors such as age, access to information (magazine, TV), educational level and

economical status are strong predictors of men's attitude towards IPV (Lawoko, 2006, 2008). Younger age, living in rural areas, lower educational and economic status are also associated with acceptance of IPV (Boyle et al., 2009; Linos, Khawaja, & Kaplan, 2012; Wang, 2016). In summary, men and women's attitudes towards IPV are identified as important indicators of their use and acceptance of IPV in relationships. Both men and women tend to justify the use of IPV by men against women in various circumstances discussed above. Literature about women's use of violence towards male partners and attitudes towards IPV in homosexual relationships is scant.

Attitudes towards IPV are identified as one aspect among many explanations for IPV, including the theory of managing or not managing expectations (Ali et al., 2016), which was developed by exploring the phenomenon of IPV in the Pakistani population. This theory is used as a theoretical framework to explore the phenomenon studied here. The theory asserts the IPV results from inability of partners to manage expectations of each other in an intimate relationship. The theory explains the phenomenon of IPV, through various levels namely individual, couple, family, and societal level. The attitudes towards IPV, coupled with other factors (personal attributes and conflict management practices) shape an individual partner's response to conflict and how it is managed and resolved. "An accepting attitude toward IPV increases the likelihood of perpetration and acceptance of IPV. A husband's accepting attitude toward IPV make him more likely to use IPV against his wife and a wife's accepting attitude toward IPV make her more vulnerable and more likely to accept IPV and remain in a violent relationship" (P.18). There are also couple, family and societal level factor that play an important role regarding IPV (Figure 1).

Attitudes towards IPV are usually explored by asking participants to respond to statements describing various instances or situations. Currently we do not know if responses to such IPV questions or statements are random, leading to a total score which is hard to compare between

respondents, or in a hierarchical manner which makes such comparison much more meaningful. If there is evidence of a hierarchical response to IPV questions, we can gain a more meaningful insight into the construct of the tendency towards IPV and attitudes towards it which may have consequences for detection and management of IPV. The aim of this study, therefore, was to use secondary data to investigate the influence of demographic variables on attitudes to IPV among South Asian men. The study also explored the extent to which there was a hierarchy of items related to attitudes to IPV against women, using Mokken scaling analysis, explained in the methods section. The importance of using Mokken scaling here—to be described below under 'Analysis'— is that this is the first time it has been applied to the data on attitudes to IPV.

METHODS

The present work is a secondary analysis of data collected by the Demographic Health Survey (DHS) from Pakistan, India, Bangladesh, Maldives and Nepal between 2006-2014. DHS is developed by the United States Agency of International Development (USAID) which is applied to different countries to a nationally-representative population through a multi-stage sampling design (DHS, 2016). The DHS is conducted every five years in several countries using large scale standardized questionnaires and a uniform methodology. The sample size is usually large, typically between 5000-15000 households.

Setting

Data presented in this study relates to five South Asian countries: Pakistan, India, Bangladesh, Maldives and Nepal. South Asia occupies approximately 3 % of the world's land area, 24% of the world's population (nearly 1.9 billion), making it the most densely populated area on earth. India is the second-most populous and seventh-largest country by area. Pakistan is the world's sixth-most populous and the 33rd-largest country, whereas, Nepal it is 48th most populous and

Participants

Participants included men and women who contributed to DHS, data for which was collected between 2006 to 2014. The sample included 258,962 individuals, including 175,611 women and 83,351 men. However, after removing records with missing information, data from 175,450 women aged 15-49 years and 79,265 men aged 15-64 years were analysed for this study. Table 2 shows the demographic details of the sample. Most of the sample was women from India. The pattern of educational level showed a marked bias in favour of men having a higher level of school education than women; however, more women had higher education. The sample was approximately equally divided between rural and urban dwelling. Other demographic data were collected such as marital status and religion, but these were incomplete across studies so were not included in the present analysis.

Data Collection

Access to the data was obtained by email request to the DHS, which collects data by administering a comprehensive questionnaire covering various demographic and health issues to eligible men and women. A range of topics are explored as part of this survey and these include: demographics; reproductive, maternal and child health; sexual behaviour; gender roles, empowerment factors such as household autonomy, access to information and IPV. For

this study, the variables on attitudes to wife beating and sociodemographic factors, including age, sex, country, marital status, educational level, rural or urban location and religion were of primary interest. Unfortunately, there is no published information about the reliability and validity of the questionnaire; nevertheless, this is a unique and very large international study without equal and we consider this a unique opportunity to conduct a comparative study of these data.

Attitudes to IPV against women were gathered on a three-point ('yes', 'no', 'don't know') scale using responses to five hypothetical situations commonly used in exploring attitudes to IPV. The statements included – with the stem 'Beating justified, if the wife' – 1. goes out without telling the husband, 2. argues with the husband, 3. burns food, 4. neglect children, or 5. refuses to have sex with the husband. A positive response to one or several of these statements was considered as having a tolerant attitude toward wife beating, while a "no" response on all five situations denoted a non-tolerant attitude.

Ethics

As this was a secondary analysis of the data, ethical approval of the study was not required. With regards to primary studies, the ethical protection of the respondents was covered internationally, by the ICF International Institutional Review Board (IRB), and locally, in each country, by their national IRBs. All the respondents were informed of the content, aims, potential risks and benefits of the survey, interviewing process and duration of the interview. The respondents were also provided with the contact information of someone in charge to solve any doubts about the procedures. Following this, the respondents read and signed informed consent document before engaging in the interview (DHS, 2012, 2016; Uthman et al., 2009).

Analysis

Data were entered into an SPSS version 24.0 database. Participants with missing data were removed. The responses to items related to attitudes to IPV against women were recoded so that a high score on an item indicated a greater likelihood to endorse IPV against women. Descriptive statistics were used to analyse the demographic data.

Data were then converted to a format suitable for analysis in the public domain statistical software R (CRAN, 2016) and then analysed using the Mokken scaling package. Mokken scaling is a non-parametric method within item response theory that was derived from Guttman scaling (Mokkan & Lewis, 1982; Stouffer et al., 1950). Item response theory methods analyse the properties on individual items and how these relate to the latent trait being measured (in this study the attitude to IPV against women) (Watson et al., 2012). The method seeks clusters of items that are consistently hierarchically related and provide a range of parameters whereby the existence of a Mokken scale may be judged. Principally, Mokken scales are judged by the Loevinger's coefficient of scalability (H) which may be applied to total scales (H_s), items (H_i) and item pairs (H_{ij}) and values of $H > 0.30$ – the minimum acceptable value – indicate the existence of a weak Mokken scale with values > 0.40 and 0.50, respectively, indicating moderate and strong scales. It is possible to calculate 95% confidence intervals around H to test if they exclude the lower-bound values: 0.30 for scales and items and 0 for item pairs (Kuijpers, Van der Ark, & Croon, 2013). Reliability (Rho) was also calculated. However, the sample size in the present study meant that the standard errors were extremely small making the calculation of 95% confidence intervals unnecessary. The Mokken scaling package also includes parameters to check that item scores continually increase over the range of the latent trait (monotonicity) and that items do not intersect and are ordered in the same way for all respondents across the whole range of the latent trait. The strength of this latter property – called invariant item ordering (IIO) (Ligtvoet, Van der Ark, te Marvelde, & Sijtsma, 2010) – is measured using Htrans (H^T) which, analogous to Loevineger's coefficient, has to be > 0.30

for weak IIO to be present. In the total sample, plots of the item characteristic curve (ICC) pairs were plotted to see if the data were suitable for IIO scaling analysis. The ICC is a curve relating the score on an item to the score on the latent trait. To be suitable for IIO analysis, there should be minimal overlap between item pairs and no 'outlying' items which can exaggerate the size of H^T (Egberink & Meijer, 2011; Meijer & Egberink, 2012; Watson, Wang, Thompson, & Meijer, 2014). Repeated random samples of approximately 10% of the whole database were taken, with replacement, for the Mokken scaling analysis. The purpose of this repeated sampling was to achieve a sample size that was adequate – as far as is known (Straat, van der Ark, & Sijtsma, 2014) – for Mokken scaling analysis and to test how stable any Mokken scales observed were within the data; analysing the total sample exceeded the capacity of the Mokken scaling package. A sensitivity analysis was carried out to see what effect country and gender had on the formation of Mokken scales in the data.

RESULTS

Table 3 shows the results of the Mokken scaling analysis. In the total sample, by mean item value, the items were ordered with the most highly endorsed item being that beating one's wife was justified if she neglected the children with the least adopted item being that related to refusing to have sex. The items formed a strong Mokken scale and, while the item pair plots suggested that the data were suitable for IIO analysis, the values of H^T are too low to suggest even weak IIO.

Table 4 shows a sensitivity analysis by country (an approximately 10% sample was taken from the Indian data as the whole sample exceeded the analytical capacity of the Mokken scaling package). India showed the same ordering of the items as the total sample and Bangladesh and Pakistan showed the same ordering of items with IPV being most justified on arguing with the husband and burning food being least endorsed. The Maldives sample also rated burning food as the least likely reason to justify IPV. The sample from Nepal barely endorsed IPV at all. All

except the sample from the Maldives showed at least week IIO with the sample from Nepal showing strong IIO. The order of items in both men and women from the total sample was the same as in the total sample (Table 5).

DISCUSSION

This study was conducted to explore the structure of a scale measuring attitudes to IPV against women by South Asian men. The study used Mokken scaling to explore the extent to which there was a hierarchy of items related to attitudes to IPV against women. This study is unique and useful in two ways: first, it is the first Mokken scaling study of these data on attitudes towards IPV against women; second, this is the largest database to date to be analysed using Mokken scaling. The data were analysed in several ways by applying Mokken scaling to repeated – with replacement – random samples from the main database and these consistently demonstrated that a Mokken scale existed in the total dataset and that the ordering of the items was identical to the ordering of the items in the total dataset. The mean item values and the values of Hs and H^T were very similar in all ten samples, suggesting that any reasonably sized sample from such a large database is sufficient for Mokken scaling and reflects the scaling in the total sample.

The sensitivity analysis showed that strong, and possibly invariantly item ordered, Mokken scales existed in the data from each of the countries (with the exception of Nepal) in the study. However, the ordering of the items by mean score differed from the ordering in the total sample. For these data, Mokken scaling has demonstrated that individuals from different countries do not necessarily place the same importance on the same aspects of IPV. Studying the total sample alone without regard to the various subgroups within it could have masked this effect and valuable information would have been lost. The important aspect of Mokken scaling here is that it relates scores on a specific set of items to the total scale score. If, for example, a man

from Pakistan and man from India were compared and they both scored 3 on the 5-item scale comprised of the items related to attitudes about IPV against women, this score would not mean the same thing. In India it would mean that the man considered neglecting the children worthy of administering a beating to his wife, but nothing else; in Pakistan it would mean that refusing to have sex was worthy of administering a beating to his wife but nothing else. Thus, Mokken scaling has provided new information about attitudes to IPV against women in these two countries. It may mean that attitudes are also shaped by the socio-cultural and political context in which people live in. We used the theory of 'managing and non-managing expectations' as a theoretical framework for this study and the results suggest that a non-accepting attitude to wife's refusal to have sex, coupled with an inability to manage conflict contributes to a feeling that a husband's expectation from his wife is not fulfilled and therefore contributes to conflict and IPV.

The implications of this study are that the measurement of attitudes to IPV using the questions in the DHS is meaningful in that a consistent hierarchy of items is observed. However, since the ordering of items between countries differs slightly, different interpretations and approaches to IPV may be required in different regions considering the individual context of each country. IPV is totally unacceptable under all circumstances and the aim of studying it must be to eliminate it and to see attitudes towards its various manifestations lead to 'zero tolerance' among both men and women. The fact that both men and women hold similar attitudes in terms of what is deemed most acceptable could provide clues to how the problem of IPV could be addressed from an educational perspective. Intervention programmes could be aimed first at educating and eliminating IPV under the circumstances deemed least acceptable – in the present study that is refusal to have sex – in the hope that this is likely to be more acceptable to participants and, thereby, more successful than initially tackling those aspects of IPV considered most acceptable One may wonder why 'refusal to have sex' related to IPV and

one explanation may be that 'sexual intercourse' is seen as not only as an important part of the relationship but men in these countries see this as their right that their wife should not refuse at any time. In addition, forced sex within marriage is not considered to be rape. Knowing that this aspect and its significance mean that further work can be done to explore what contributes to this attitude and expectation and what can be done to change this attitude. Education about the least acceptable aspects of IPV could then be used to undermine the acceptability of the other more accepted aspects. In addition, given our results, it may be necessary to tailor interventions to different regions to suit the needs of the region and to ensure maximum intervention effectiveness. Use of participatory research approaches may help in developing appropriate and acceptable interventions and strategies in these countries.

Limitations

As mentioned, culture and religion are interacting factors in understanding the issue of IPV and attitudes to IPV against women (Al-Tawil, 2012; Krob & Steffen, 2015). As the data presented here came from a range of South Asian countries which share many aspects of culture and religions, further work is needed to determine which has the most influence over attitudes towards violence against women and IPV. Finally, it is worth considering the sample size, which, for Moken scaling, has not been definitively described. Some recent work (Straat et al., 2014) using simulations across a range of parameters including strength of item scalability and the extent to which items are correctly allocated to scales (per element accuracy) has provided some insight. However, the total sample size used in the present study vastly exceeds the largest sample size used in the simulations and is the largest sample size used in Mokken scaling to date. The sample sizes for the sensitivity analyses are also very large; therefore, we consider that sample size is not an issue in the present study that would have an adverse influence on the Mokken scales observed which can be considered accurate in terms of the items included and the ordering of items.

Conclusion and recommendations

This study has demonstrated that Mokken scales exist in a large set of data on IPV. Differences exist between countries. The results of this study should be of concern because it is clear in many countries, and by both males and females, that IPV is considered acceptable for the range of items included in the study. Education is required to emphasise that, regardless of country, culture, religion or the circumstance, IPV is not acceptable. The study does indicate that there are differences between countries in the extent to which aspect of the behaviour of a wife merit IPV, which may be useful in targeting particular behaviours of men towards their partners. Nevertheless, interventions need to be designed and implemented that target attitudes towards IPV in itself, and which do not imply that some behaviours may, in fact, be acceptable. Further research could involve including additional countries and also extending the study in time, making it longitudinal, to see if attitudes change with time.

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Table 1.

	Bangladesh	*India*	*Maldives*	*Nepal*	*Pakistan*
Area	147,570 km^2	3,287,263 km^2	298 km^2	147,181km^2	881,913 km^2
Population	164.7 million	1.339 billion	427,756	28,982,771	197 million
Density	1,116.6km^2	401.6/km^2	1,261.3km^2	198.3km^2	244.4/km2
Gender	Men (50.39%); women (49.61%)	Men (52%); women (48%)	Men (56.8%); women (43.2%)	Men (49.5%); women (51.5%)	Men (51%); women (48.76%) Transgender(0.24%)
Religion (%)	Islam (90) Hinduism (9) Buddhism (0.6) Christianity (0.3) Others (0.1%)	Hinduism (79.8) Islam (14.2) Christianity (2.3) Sikhism (1.7) Buddhism (0.7) Jainism (0.4) others (0.9)	Sunni Islam (100%)	Hinduism (80) Buddhism(10) Islam (4.4) Kirat (3.1) Christianity (1.4) Others (0.8)	Islam (96); Hinduism (1.85) Christianity (1.5) Others (0.6)
Official language	Bengali	Hindi; English	English; Dhivehi	Nepali; Maithili; Bhojpuri; English	Urdu, English
GDP per capita	$1,888	$2,198	$14,501	$919	$1,357

Table 2. **Demographic details of sample (n=258,962)**

	Men (%)	Women (%)	Total*
Country			
India	74369 (37.4)	124385 (62.6)	198754
Pakistan	3134 (18.8)	13558 (81.2)	16692
Bangladesh	0 (0)	17863 (100)	17863
Nepal	4121 (24.5)	12674 (75.5)	16795
Maldives	1727 (19.5)	7131 (80.5)	8858
Relationship			
Married	52239 (28)	133782 (72)	186021
Widowed	584 (10)	5275 (90)	5859

Separated/ living apart	357 (16.7)	1783 (83.3)	2140
Divorced	238 (15.8)	1272 (84.2)	1510
Unmarried/ never attached	29930 (47.2)	33498 (52.8)	63428
Education			
None	12689 (17.8)	58417 (82.2)	71106
Unknown certificate	51 (37)	87 (63)	138
Primary	13359 (31.2)	29465 (68.8)	42824
Secondary	44312 (38.8)	69988 (61.2)	114300
Higher	12909 (42.3)	17642 (57.7)	30551
Domicile			
Urban	41345 (35.8)	74221 (64.2)	115566
Rural	42006 (29.3)	101390 (70.7)	143396
Religion			
Hindu	58209 (36.2)	102378 (63.8)	160587
Muslim	11417 (21.7)	40339 (78.3)	51756
Christian	6731 (37)	11245 (63)	17976
Sikh	1010 (26.7)	2772 (73.3)	3782
Buddhist	1490 (33.8)	2923 (66.2)	4413
Jain	333 (38.2)	539 (61.8)	872
Donyi polo	144 (27.2)	385 (72.8)	529
Parsi Zoroastrian	3 (50.0)	3 (50.0)	06
Jewish	5 (22)	11 (88)	16
Kirat	92 (30)	215 (70)	307
Others	755 (42)	1040 (58)	1795
Age			
Mean (SD)	31.2 (10.8)	29.8 (9.4)	30.2 (9.9)
Minimum	15	15	
Maximum	64	49	

* some missing data in columns

Table 3. Mokken scaling of attitudes to wife beating in ten samples (stem question: 'Beating justified…)

Item label	Mean scores										Total†
…if wife neglects the children		1.61	1.61	1.61	1.62	1.61	1.61	1.61	1.62	1.62	1.62	1.62
…if wife argues with husband		1.51	1.51	1.51	1.51	1.51	1.51	1.52	1.52	1.51	1.51	1.51
…if wife goes out without telling husband	1.45	1.47	1.48	1.49	1.48	1.48	1.49	1.48	1.48	1.48	1.48	
…if wife burns the food		1.28	1.29	1.28	1.28	1.28	1.28	1.29	1.29	1.28	1.28	1.28
…if wife refuses to have sex with husband	1.26	1.27	1.23	1.26	1.27	1.26	1.27	1.26	1.26	1.26	1.26	
N	25370	25528	25361	25738	25459	25544	25483	25415	25571	25493	258962
H_s	0.62	0.63	0.62	0.63	0.63	0.62	0.63	0.63	0.64	0.64	
H^T	0.27	0.29	0.27	0.28	0.28	0.27	0.27	0.27	0.28	0.29	
Rho	0.84	0.84	0.84	0.84	0.82	0.83	0.84	0.84	0.84	0.83	

Table 4. Sensitivity analysis: mean item scores by country and gender (stem question: 'Beating justified…)

Item label	Total[†]	Bangladesh	India	Maldives	Nepal	Pakistan	Total
…if wife neglects the children	1.62	1.32	1.68	1.39	1.02	1.65	1.62
…if wife argues with husband	1.51	1.42	1.54	1.35	1.02	1.71	1.51
…if wife goes out without telling husband	1.48	1.30	1.52	1.23	1.01	1.65	1.48
…if wife burns the food	1.28	1.10	1.31	1.13	1.00	1.34	1.28
…if wife refuses to have sex with husband	1.26	1.16	1.24	1.41	1.01	1.67	1.26
N		17861	19838	8813	12784	16652	258962
H_s	-	0.60	0.62	0.66	0.80	0.75	
H^T	-	0.33	0.31	0.27	0.56	0.34	
Rho	-	0.81	0.83	0.86	0.79	0.90	

[†] - refer to Table 2 for abbreviations

Table 5. Sensitivity analysis of data by gender (stem question: 'Beating justified…)

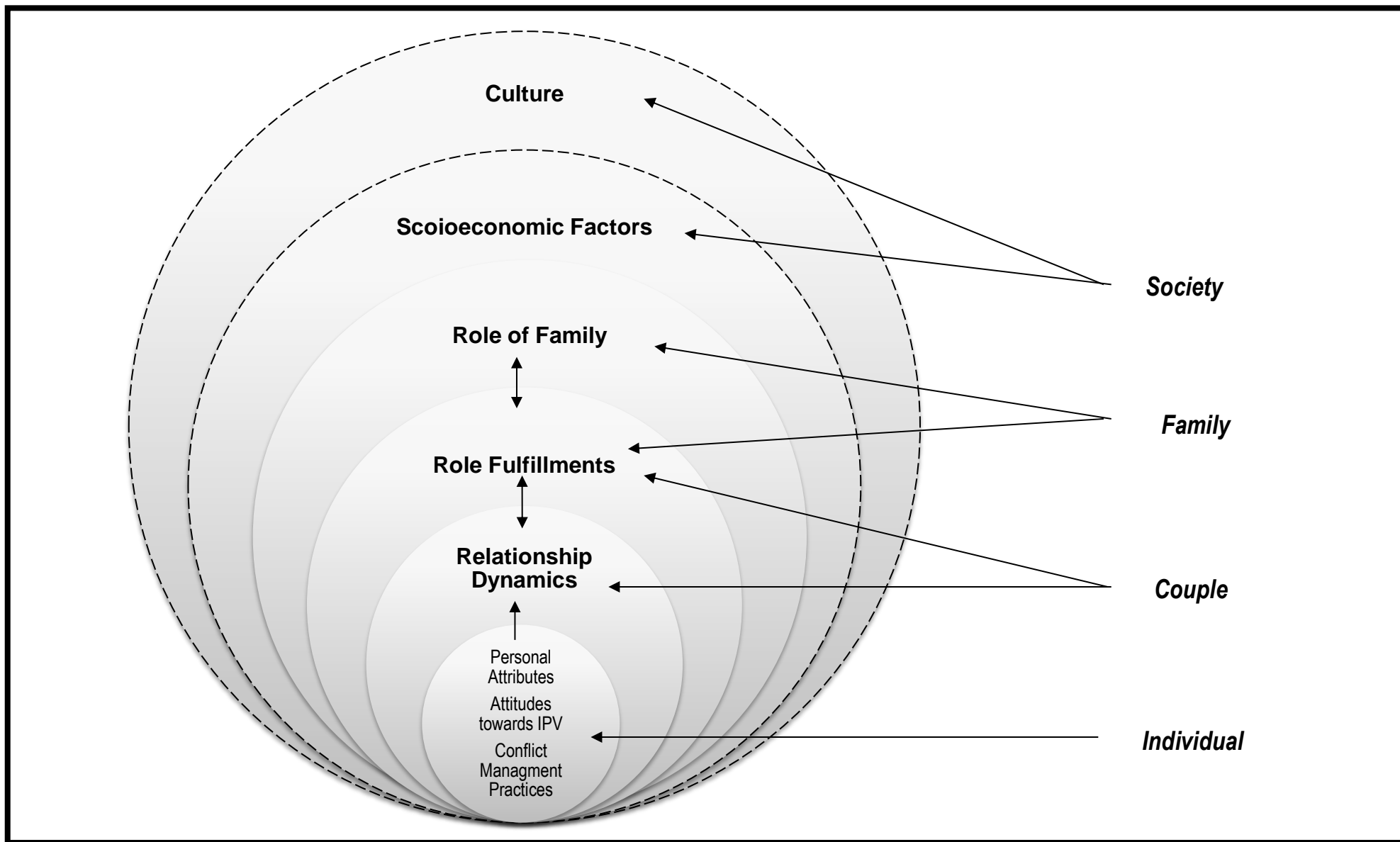| Item label	Men	Women	Total
…if wife neglects the children		1.62 1.61	1.62
…if wife argues with husband		1.50 1.53	1.51
…if wife goes out without telling husband	1.47	1.50	1.48
…if wife burns the food		1.22 1.30	1.28
…if wife refuses to have sex with husband	1.18	1.29	1.26
N	7582	17532	258962
H_s	0.58	0.65	
H^T	0.35	0.26	
Rho	0.79	0.85	

Figure 1: Theory of managing or not managing expectations