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Psychometric properties of the Persian version of the “Intergenerational Relationship Quality Scale for Aging Parents and Their Children”

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Abstract:

BACKGROUND: Investigating the status of intergenerational relationships of elderly parents with their adult children is very important in examining issues related to the status of the elderly such as well being and quality of life and other aspects of elderly life. Given the significance of the topic, the current study aimed to examine the psychometric properties of the Persian version of “Intergenerational Relationship Quality Scale for Aging Parents and Their Children” (IRQS-AP).

MATERIALS AND METHODS: A total of 463 community-dwelling elders (aged 60 years or older) in Tehran participated in this study through multistage cluster sampling method. To investigate reliability, the construct and convergent validity of the IRQS-AP, confirmatory factor analysis (CFA), and interclass correlation coefficient were done.

RESULTS: The content validity index was 0.84 for the entire tool. In the CFA, we found the instrument had a four-factor structure and adequate internal consistency. The scale had a significant and positive correlation with the two measures of loneliness and depression. Furthermore, Cronbach’s alpha was estimated at 0.77, and the high value of the interclass correlation was 0.82.

CONCLUSION: The IRQS-AP is a valid and reliable scale that can be used to examine the status of intergenerational relationship quality in Iranian elder population.

Keywords:

Ambivalence, intergenerational conflict, intergenerational solidarity, Iranian elder, scale validation

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Introduction

Given the increase in life expectancy, the number of years lived simultaneously between generations is more than ever before. However, due to the reduced fertility rate, intragenerational and intergenerational relationships have also decreased compared to earlier generations. In recent years, we have witnessed generational differences in various forms among society and family. Nowadays, we live in a society where this generational difference and differences between parents

and their children’s lives are experienced as conflicts.^[1,2]

The younger generation no longer defines itself by, the older generation’s norms and seeks newer models. Certain past norms and sanctities have either dwindled or disappeared. In other words, we are witnessing the least consensus on public culture such as premarital relations, consanguineous marriage, leisure time, and religious behaviors. Such normative differences are the primary source of discord in intergenerational relationships, such as between children and aging parents.^[3]

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The family evolution in recent decades has caused families to be exposed to serious challenges. The challenges may call into question the traditional type of family structure and lead to a decrease in adult children's relationships with their aging parents and reduce their support from the family, and these challenges between aging parents and their adult children increases even more due to caring for aging parents, while the relationship between children and parents is of great value and can cause favorable effects, such as improving self-esteem, quality of life and well-being for both of them, especially aging parents.^[4,5]

The parent-child relationship is a precious relationship. It is associated with desirable effects such as boosted self-esteem, quality of life, and a sense of well-being, particularly for the elderly parent. Nevertheless, specific issues arise, and incidents occur that alter the quantity and even the quality of relationships and distance them from the ideal or acceptable status.^[6-8]

Contemporary family sociologists and, in particular, Bengtson have defined the intergenerational solidarity theory, which is a comprehensive project for describing emotions, behavior, and attitudes between aging parents and children in family ties.^[9] Furthermore, the solidarity theory attempts to present an accurate description of long-term bonds between children and parents toward one another and why families cannot exist without solidarity. This model includes six major dimensions, such as emotional or effectual (positive sentiments and feelings), functional (resource and support exchange), structural (interaction opportunities), consensual (attitude and value agreement), normative (commitment to familial obligations), and associational (interaction and activity frequency and type).^[4,9]

Intergenerational solidarity preserves the relationship between aging parents and their children, and the concept of solidarity is a relatively sustainable and complex concept and its quality and form is changeable over time. They also address the issue of tension in intrafamilial intergenerational solidarity, such that if the aging parents require greater support, this tension becomes more pronounced.^[10-12]

Adult children may be put under ambivalent situations, i.e., if they help their parents too much, they will lose their independence, and if they protect their independence, they feel that they are not supporting their parents enough. Likewise, parents might have similar feelings of being pushed and pulled around. This conflict is due to the tensions and disagreements between the family members, which still exist even if not verbally expressed. The addition of conflict to the

solidarity paradigm by Bengtson led to the evolution of the solidarity-conflict theory, which shows the negative aspects of intergenerational relations that include different types of ambivalences.^[13,14]

By the end of the 1990s, Lüscher and Pillemer introduced the concept of ambivalence that describes the simultaneity of positive and negative elements in intergenerational relations. The primary factor contributing to ambivalence between aging parents and children is the imbalance between conflicts and solidarity in relationships. In other words, ambivalence is the conflict in the relationships between aging parents and their adult children that cannot culminate in peace and agreement.^[15,16]

Thus, various countries have developed different tools across the world to examine the intergenerational relations between the elderly and their children, one of which is the "Intergenerational Solidarity Inventory." This is one of the simplest and oldest tools available in this field and revolves around the closeness felt between aging parents and their children.^[9] The "Attitudinal Familism Scale" measures the positive attitude and commitment or solidarity the family members have toward one another. The correlation coefficient of this tool has been shown to be 0.7, which indicates good validity and reliability.^[17] The "Conflict Behavior Questionnaire" assesses conflict-related behaviors between elderly parents and their children (Cronbach's alpha = 0.8).^[18]

Among other available foreign tools are Bengtson's 10-item "Positive Affect Index,"^[19] Walker's 17-item "Intimacy Scale,"^[20] and Cicirelli's "Adult Attachment Scale."^[21] Another scale in the field of intergenerational relations between elderly parents and their children is Bai's scale (2017) and the Longitudinal Study of Generations (LSOG) checklist, which is the main topic of this study. According to Bai, the strength of this tool is that unlike other tools that are unidimensional, this scale assesses all the dimensions of solidarity, conflict, and ambivalence simultaneously.^[22]

Using the existing tools, many research studies have been conducted. For example, in 2007, Lowenstein used the LSOG and examined solidarity-conflict and ambivalence and the effect of solidarity-conflict and ambivalence on elderly parents' quality of life in five different countries (Old Age and Autonomy: The Role of Service Systems and Intergenerational Family Solidarity; Norway, England, Germany, Spain, and Israel [OASIS]). The results indicated that solidarity was similar and relatively high in aging parent-child relations in the five countries. Furthermore, conflict and ambivalence were relatively low, and the greater the conflict and

ambivalence between parent and child, the lower the quality of their lives.^[23]

Elsewhere, in Germany, Steinbach (2008) examined different types of aging parent-child relations (solidarity, conflict, and ambivalence) using the Value of Children and Intergenerational Relations tool. Based on the results, the children's relations with their mothers were friendlier, although the role of the six dimensions of solidarity was very influential in determining the type of relationship. Moreover, the conflict and ambivalence dimensions were lowest in the mothers' relations with their daughters.^[24]

Although topics related to parents and children – as generations – are not new to sociological studies, the relation between aging parents and their children that have been addressed in the literature review is a relatively new topic – especially in Iran. Furthermore, studies relevant to parent-child relations have mostly revolved around the generational gap between them, and elderly parents have been neglected. On the other hand, foreign studies have discussed topics related to aging parent-child relations to a greater extent, though they have used questionnaires specific to the elderly less.^[22]

Therefore, the current study was conducted “to examine the structure of different models on intergenerational relations between aging parents and their adult children from the parents' perspective” by translating Bai's 2018 “Intergenerational Relationship Quality Scale for Aging Parents and Their Children” given the following reasons: the existence of considerable differences in the types of relations between elderly parents and their children, the increasing intergenerational conflict in developing countries, lack of a study in Iran examining the type and structure of relations between aging parents and their children from the parents' perspective, and lack of a relevant questionnaire.

Materials and Methods

Study design and setting

The cross-sectional study aimed to psychometrically evaluate Bai's “Intergenerational Relationship Quality Scale for Aging Parents and Their Children” (2017).^[22] The statistical population consisted of men and women aged ≥ 60 years in Tehran in 2020.

Study participants and sampling

The study sample comprised 463 community-dwelling elders aged in Tehran that were selected through multistage cluster sampling.

The inclusion criteria were the age of ≥ 60 years, willingness to participate, having a living child, and

ability to speak Persian. The exclusion criteria were the presence of special diseases (e.g., mental disorders, seizures), use of specific drugs/drug abuse, and incompletely filled out questionnaires.

To this end, Tehran was first divided into five developmental zones: the lower, lower to average, average, average to higher, and higher zones. After that, a municipal district was selected randomly from each zone, and two neighborhoods were selected from each municipal district.

Afterward, trained questioners entered the neighborhoods and went door to door to interview the elderly. In case elderly parents possessing the inclusion criteria of the study were available, they would be briefed on the research goal. Upon their consent, they were asked the questions of the intergenerational scale.

To select the child for the questionnaire, we first wrote the names of the participants' adult children on paper. Then, one of the papers was randomly drawn, and the elderly parent was asked to complete the questionnaire by considering the selected child.

Data collection tool and technique

After acquiring the English version of the scale and taking permission from its author to translate it, it was translated, back-translated, and psychometrically evaluated. Initially, the scale was translated by two translators proficient in English, and the primary draft of the Persian version was extracted. Then, the scale was analyzed and assessed by ten experts in gerontology, psychology, social sciences, and a psychometric specialist in two stages.

First, the face validity was examined by assessing the items' clarity, simplicity, and understandability. Second, the scale was evaluated for its appropriateness and relevancy to Iranian society. After that, upon addressing the scale's issues and back-translating it into English by two other experienced translators, it was compared with the original version of the scale. Then, the two English versions were compared with each other in terms of conceptual uniformity in a meeting held with the researchers and translators, and the necessary modifications were applied to the Persian version.

Eventually, a pilot study was conducted on 20 elderly parents to examine the appropriateness of the scale to their perception, to determine the time it takes to respond, and to modify/correct any possible issues. Once the final version of the questionnaire was developed, construct validity was examined by questioning a larger sample size. The construct validity of the scale was evaluated by performing confirmatory factor analysis (CFA) and

estimating convergent validity using two questionnaires: the Geriatric Depression Scale (GDS)-15 and the UCLA Loneliness Scale. Finally, the reliability of the scale was evaluated by internal consistency and stability. Cronbach's alpha was calculated for internal consistency, and the intraclass correlation coefficient was assessed at 2-week interval through test-retest to evaluate the stability of the scale.

The demographic information form

Information regarding the participants' age, sex, marital status, number of children, employment status, and educational status were gathered by this form.

The "Intergenerational Relationships between Aging Parents and Adult Children" Scale

The tool used in this research was the scale developed by Bai in 2017 that contained 13 items based on the solidarity model (for six dimensions of affectual, structural, functional, consensual, associational, and normative). It evaluates the conflicts and relations between elderly parents and their adult children.^[22] Unlike other unidimensional tools, this tool is multidimensional and simultaneously evaluates all the dimensions of solidarity, conflict, and ambivalence between aging parents and their children.

Needless to say that in Bai's 2017 study, of the six dimensions of solidarity, the functional and effectual dimensions were integrated into one another in the CFA. In Asian culture, elderly parents are at times offered gifts, financial aid, and help in their house chores. Moreover, the other dimensions were also integrated in pairs: normative-associational and structural-consensual. Eventually, all the dimensions mentioned above and "conflict" were confirmed by the CFA in the five-dimensional IRQS-AP. Three items of the scale evaluate the solidarity normative-associational, two items evaluate the solidarity effectual dimensions, three items evaluate the solidarity normative-associational, two items assess the functional, and three items assess the solidarity dimension.

Bai's 2017 English version's scoring system is based on the 1-5 Likert scale, which is named appropriate to each dimension (solidarity and conflict). The scale's score ranges from 13 to 65, such that the higher the score, the better the quality of the parent's relationship with his/her child. Moreover, Cronbach's alpha was 0.77.^[22]

The Geriatric Depression Scale-15

Based on the 30-item form constructed by Sheikh and Yesavage in 1986, the questionnaire consists of 51 questions with "yes-no" responses. It classifies the group under study into three groups with moderate depression (5-10), severe depression (10-15), and no

depression. This scale has been validated on 204 elderly Iranians, where Cronbach's alpha was 0.9 and a cutoff point of 8 (0.9 sensitivity and 0.84 specificity) was obtained.^[25]

The UCLA Loneliness Scale

In 1978, Russell *et al.* developed the original version of the loneliness scale in UCLA to assess the concept of loneliness. There were 20 items on the scale, and all were written in negative form. The revised version (1980) contained 10 positive and 10 negative statements but still had some issues. Finally, the third revised edition (1996) – which has been used in our study – contained 11 positive and 9 negative statements. The responses are stated in negative form and are scored as 4-degree Likert-type answers, including never (1), seldom (2), sometimes (3), and often (4). Moreover, the questions written in positive form were scored inversely. This scale score ranges from 20 to 80, where a score of 20 indicates no feelings of loneliness and greater than 20 indicates feelings of loneliness. Cronbach's alpha was 0.96.^[25]

Ethical consideration

The present study was confirmed and supported by the University of Social Welfare and Rehabilitation Sciences with ethical code of IR.USWR.REC.1398.046.

Data analysis

The data were analyzed using SPSS version 19 (SPSS Inc., Chicago, IL, USA) and AMOS Graphics version 18 (Amos v18, Chicago, USA). Descriptive statistics such as frequency, percentage, and mean were used to examine the participants' demographic characteristics. Content validity and CFA were used to assess the measurement model of the IRQS-AP (construct validity). Pearson's correlation and intraclass correlation coefficient were used to examine convergent validity and reliability over time, respectively.

Results

As shown in Table 1, the demographic characteristics of the elderly participants showed that 50.6% were male, and the mean age of the participants was 67.86 years; the mean age of their children was 35.78 years. The majority of the parents (71.2%) and their children (57.1%) were married. Approximately 11.2% of the elderly were illiterate. However, almost half their children (43.6%) held either associate or bachelor's degrees. Regarding the parents' employment status, 99.6% were unemployed, 37.8% were retired, 6.7% had part-time jobs, and 7.3% were disabled. 48.6% of the children had full-time jobs, and 5.6% were jobless.

That indicated that only item 10 was complicated – from the perspective of two specialists and a number of

Table 1: Demographic characteristics of participants (n=463)

Parent's characteristic	Frequency (%)	Child's characteristic	Frequency (%)
Sex		Sex	
Female	231 (49.4)	Female	230 (49.4)
Male	235 (50.6)	Male	236 (50.6)
Age group mean age		Age group mean age	
60-74	389 (83.5)	>30	159 (34.1)
75-84	65 (13.9)	30-39	163 (35)
≥85	12 (2.6)	40-49	94 (20.2)
		50-59	40 (8.4)
		≥60	7 (1.5)
Marital status		Marital status	
Married	332 (71.2)	Married	266 (57.1)
Unmarried	133 (28.54)	Unmarried	200 (42.91)
Educational status		Educational status	
Illiterate	52 (11.2)	Illiterate	4 (0.9)
Able to read and write	55 (11.9)	Able to read and write	5 (1.1)
Primary and intermediate	89 (19.09)	Primary and intermediate	42 (9.01)
High school and diploma	165 (35.40)	High school and diploma	113 (22.24)
Academic degree	81 (43.6)	Academic degree	301 (64.59)
Theological studies	2 (0.4)	Theological studies	2 (0.4)
Employment status		Employment status	
Employed	77 (16.52)	Employed	281 (60.30)
Retired, disabled, unemployed	210 (45.06)	Retired, disabled, unemployed	42 (9.01)
Housewife	177 (38.5)	Housewife	91 (19.5)
		Student	52 (11.2)

parents. This item was modified, clarified, and simplified upon consulting the specialists. On the whole, the experts believed the questions were simple and clear. To check for relevancy, the content validity index was examined, which was >0.79 for most of the items and 0.84 for the entire tool. To examine construct validity, as shown in Graph 1, four indices, Chi-square goodness of fit minimum value (CMIN), root mean square error of approximation (RMSEA), comparative fit index (CFI), and goodness of fit (GFI), that were related to CFA had desirable levels of significance and indicated a goodness of fit. The factor loading of all items was significant ($P < 0.005$) [Table 2].

Given Figure 1, the CFA confirmed the "Intergenerational Relationships between Aging Parents and Their Adult Children" Scale.

To examine convergent validity, Pearson's correlation coefficient was calculated twice; once the correlation was assessed between our scale (which covered two variables of solidarity and conflict) and the GDS. And next, Pearson's correlation coefficient was calculated between our scale and the "loneliness scale." The correlations between the variables mentioned above were estimated as follows [Table 3], at a significance level of 0.005 and a confidence interval (CI) of 95%.

The results of Cronbach's alpha coefficients for the items in Bai's 2017 scale for the two dimensions of

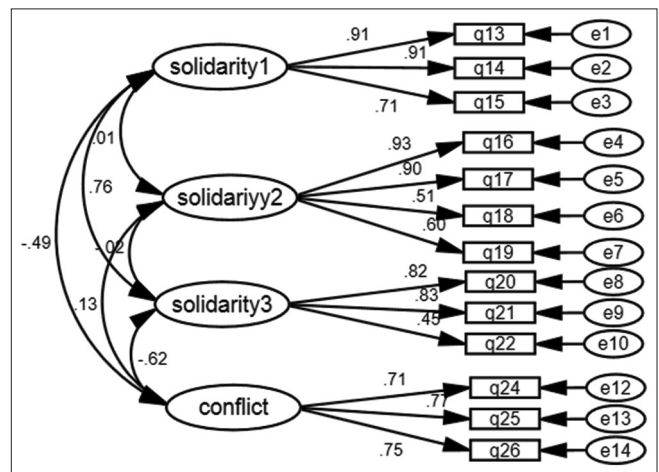


Figure 1: The confirmatory factor analysis for the "Intergenerational Relationships between Aging Parents and Their Adult Children" Scale

solidarity and conflict and the overall scale were 0.75, 0.78, and 0.77, respectively, and showed that the internal consistency of the scale did not change in the two aforementioned dimensions upon removing either of the questions. Therefore, the internal consistency of all the questions of the solidarity and conflict dimensions of the IRQS-AP was confirmed with respect to the other questions.

For assessing the reliability of the IRQS-AP tools over time, a pilot study was conducted on 30 paired samples with a time period of 1 week (test-retest). Finally, an ICC

of 0.82 (%95 CI: 0.63–0.92) was estimated, indicating the tool’s acceptable reliability over time.

Discussion

The current study is the first of its kind to psychometrically evaluate a tool in the field of intergenerational relations between elderly parents and their adult children based on the solidarity, conflict, and ambivalence models in Iran. In Bai’s study, the CFA converted the five factors of the model of the intergenerational relations (effectual, normative–associational, structural–consensual, functional, and conflict) into 13 items and 4 factors, and confirmed the aforementioned factors.

The internal consistency of the Bai scale in the Chinese elderly sample with loneliness variable was -0.44 and it was similar to the present psychometric study.^[22] Cronbach’s alpha coefficient was calculated to be 0.75 in the present study and 0.77 in the study, and in Lee’s study (2015), in a sample of 600 elderly people to measure the coefficients between them and their children, 0.83 was obtained.^[26] In the OASIS study, the LSOG scale was standardized in 5 European countries and the United States, and 6 dimensions of correlation were separated into 6 dimensions (bilateral coherence, normative coherence, structural, collective, emotional, and functional coherence) and the correlation dimension consisted of 54 items and coefficients. Cronbach’s alpha was obtained in the overall coherence dimension of 0.84. However, Cronbach’s alpha coefficient in the correlation dimension in the present study was calculated to be 0.75.^[23]

The four factors found in Bai’s study^[22] also included the solidarity dimensions, namely normative–associational, structural–consensual, effectual, and conflict in intergenerational relations. The functional domain of Bai’s scale that includes offering financial aid and gifts to elderly parents is a common custom in Asian culture and families and is a sign of respect. Thus, this dimension of solidarity is embedded in the other domains, such as effectual and structural–consensual.

In the current study, given the CFA results, the four-dimensional nature of the IRQS-AP was confirmed among the Iranian elderly sample. The four CFA indicators, CMIN, GFI, CFI, and RMSEA, had desirable levels of significance, which indicated the goodness of fit of the model. In fact, all 13 items contributed to Bai’s 2017 “Quality of Intergenerational Relationships between Aging Parents and Children” Scale.

In light of the current study’s objective, the research results indicated that Bai’s 2017 IRQS-AP had good reliability and validity in a sample of elderly Iranians. The current questionnaire encourages the participants to complete it, given the low number of items (13 items) it contains. The ease of use of this tool is due to its features and the researchers’ interest in using it in research studies have led to this choice and its use in Iran and on the elderly. Here, we translated the aforementioned questionnaire from English into Persian using simple but clear and precise language, resulting in desirable face validity (from the experts’ perspective). Overall, the items were examined both in terms of simplicity and clarity, and except for one item, all of them were simple and clear. The items that needed minor revisions were modified and finalized for utilization among the main population under study.

To examine convergent validity, Pearson’s correlation coefficient was evaluated between the variables of conflict, solidarity, and ambivalence in intergenerational relations between elderly parents and their children and between the sense of loneliness and depression in the elderly. The “sense of loneliness” and depression indicators have good convergent validity with the

Table 2: Goodness-of-fit indicators for Bai’s Intergenerational Relationships between Aging Parents and Their Adult Children Scale (2017)

Index appropriate to the model	Expected values	Values calculated in the model
CMIN	<5	2.8
CFI	≥0.9	0.963
GFI	≥0.9	0.947
RMSEA	<0.08	0.062

CMIN=Chi square goodness of fit minimum value, CFI=Comparative fit index, GFI=Goodness of fit, RMSEA=Root mean square error of approximation

Table 3: Subscale correlations and convergent validity: Bivariate Pearson correlations (n=466)

	1	2	3	4	5	6	7
IRQS-AP	0.738**	0.565**	0.701**	0.576**	-0.432**	-0.390**	-0.299*
Consensual-normative solidarity (1)	1	0.059	0.666**	0.401**	-0.297**	-0.235**	-0.271*
Structural-associational solidarity (2)	0.059	1	0.006	-0.081	0.082	-0.151**	-0.054
Affectual closeness (3)	0.666**	0.006	1	0.448**	-0.317**	-0.365**	-0.320**
Intergenerational conflict (4)	0.401**	-0.081	0.448**	1	-0.806**	-0.318**	-0.216**
Ambivalence (5)	-0.297**	0.082	-0.317**	-0.806**	1	0.319**	148**
Sense of loneliness (6)	-0.235**	-0.151**	-0.365**	-0.318**	0.319**	1	0.594**
Depressive symptoms (7)	-0.271**	-0.054	-0.320**	-0.216**	0.148**	0.594**	1

**Correlation is significant at the 0.01 level (two-tailed). IRQS-AP=Intergenerational Relationship Quality Scale for Aging Parents

conflict variable scores and good divergent validity with the solidarity variable scores; thus, both are two appropriate variables for examining the quality of relationships between elderly parents and their children. In other words, an increase in intergenerational conflict raised the "sense of loneliness" and depression scores in the elderly. Therefore, those parents who had greater solidarity in their relationships with their children experienced loneliness and depression to a lesser degree.

Moreover, Cronbach's alpha for internal consistency of intergenerational relations between elderly parents and their children in both solidarity and conflict dimensions indicates good reliability of the scale. The internal consistency of the Persian version of the IRQS-AP was similar to that estimated in Bai's (2017) psychometric evaluation.^[22]

Limitations and recommendation

This study had several limitations. The first was selecting the elderly as the only source of information. Second, this study was carried out in the capital city, so due to cultural differences, it is suggested that this the validation of IRQS-AP examines in the rural area.

Furthermore, we recommend studying the scale among the elderly population of other provinces that are similar in terms of culture. For example, the functional dimension may appear as an independent dimension in some different cultures. Generally speaking, future studies must continue to examine the significant aspects of this construct and expand the items sensitive to culture.

Conclusions

Understanding how familial relations between aging parents and children develop and what form they take is the prerequisite of policy development and future research. The significance of the family unit as the cornerstone of all types of health care has also been recognized. In every society, the elderly are considered one of the most important influential resources in a country's development.^[27] The prevalence of any kind of psychological disorder among them can lead to the wastage of material and spiritual investments. Thus, examining intergenerational relationships can help reduce psychological disorders among this age group by assisting them to thrive. In the long run, the entire society can benefit from the positive effects and advantages of such measures.^[9] Thus, the presence of appropriate tools for examining the status of intergenerational relationships between aging parents and their children is the prerequisite of recognizing society's status quo. In this study, the IRQS-AP had good validity and reliability among the Iranian elderly population. Due to its short,

clear, and simple items and appropriateness to the Iranian culture, it is usable by researchers, consultation service providers, and policymakers.

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Conflicts of interest

There are no conflicts of interest.

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