

## DEVELOPMENT, VALIDATION, AND PSYCHOMETRIC EVALUATION OF A COMPREHENSIVE INSTRUMENT MEASURING MORALITY (CIMM)

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The present study was designed to develop and validate a comprehensive instrument measuring morality (CIMM) based on the four components of morality (moral sensitivity, moral judgment, moral motivation, and moral character) presented by Rest, Narvaez, Thoma, and Bebeau (1999). We aim to check factor structure of CIMM through exploratory factor analysis (EFA) and to confirm the resulting factor structure in a second sample using confirmatory factor analysis (CFA). The study included a total of 917 adolescents. EFA presented three meaningful factors for moral sensitivity, four factors for both moral judgment and moral motivation, and five factors for moral character dimension. CFA on the second sample further confirmed the same factor structure extracted from EFA for all four dimensions of CIMM. Alpha reliabilities ranged from .63 to .85 for moral sensitivity, from .71 to .84 for moral judgment, from .64 to .84 for moral motivation, and from .50 to .83 for moral character. In conclusion, CIMM, containing 20 items for moral sensitivity, 39 items for moral judgment, 34 items for moral motivation, and 32 items for moral character, emerged as a reliable and valid instrument for comprehensive measure of morality and addressed all components of morality as presented by Rest et al. (1999).

**Key words:** Moral sensitivity; Moral judgment; Moral motivation; Moral character; Four components of morality.

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Morality has been explored in psychology for over six decades, beginning from moral issues proposed by philosophy of Aristotle, Piaget, and Kohlberg (Bornstein & Lamb, 1999). Morality introduces a set of values and norms that are thought to be a binding force for the members of the society. Morality provides a standard for good behavior and regulates the behavior of citizens within the group and their actions towards people in other groups (Luckmann, 2000).

Efforts to describe and measure morality over the past 50 years have usually defined morality as moral judgments (a unidimensional concept of morality) to demonstrate morality in specified dilemmas. Piaget's preoperational and operational developmental levels provide the groundwork for Kohlberg's (1971) theory of moral development based on six moral stages (Kohlberg & Hersh, 1977). Measurements and instruments based on Kohlberg's theory and method (Gibbs, Widaman, & Colby, 1982) usually contain moral dilemmas. Interpretation of these dilemmas assumed actual moral decision-making. However, the validity of these instruments was widely criticized (Abdellaoui, Lourel, Blatier, & Beauvois, 2015). Af-

terward, Rest, Narvaez, Thoma, and Bebeau (1999) as neo-Kohlbergians, introduced another extensively used scale of moral judgment called Defining Issues Test (DIT). A drawback of DIT was that it measured only post-conventional reasoning of the Kohlberg stages. Lind (2008), based on Kohlberg's measurement methods, also developed a scale called Moral Judgment Test (MJT). All these instruments incorporated videotaped dilemmas (Brabeck et al., 2000), printed dilemmas (Bebeau, Rest, & Yamoore, 1985), or written scenarios (Clarkeburn, 2002). These instruments are complicated to score, associated to reactions of emotions (Cohen, Wolf, Panter, & Insko, 2011), and have challenged psychometrics.

The concept of "micromorality" also called "moral realism" (Flanagan, 1991) brought change to the old paradigm of morality. Instead of judging one's morality by interpreting moral dilemmas, Rest et al., (1999) focused on everyday moral functioning, that is face-to-face relationships of people in everyday life. Rest (1984; Rest et al., 1999) proposed an independent and dynamic four-component model of morality. These components, including moral sensitivity, moral judgment, moral motivation, and moral character, represented moral behavior in general.

The first major component of moral behavior known as *moral sensitivity* (MS) is about observing and understanding the situation. For example, ability to "read" the situation and to decide the role we might play in this situation while considering the perspectives of others. Rest (1984) defined moral sensitivity as an awareness of how our actions affect other people. It includes being aware of (a) who the participants in the situation are; (b) which lines of action are possible, and (c) what the consequences of different behaviors might be to different parties. Rest et al. (1999) proposed that moral sensitivity involves constructing different possible scenarios for a situation and imagining how different actions might impact participants in that particular situation.

The second component, *moral judgment* (MJ), is a person's ability of selection from available choices. It includes ultimate moral and expert reasoning and the application of ethical codes. Rest (1984) defined this component as, what course of action from the possible alternatives ought to be chosen in a particular situation. Moral judgment component is based on the assumption that the situation is already interpreted while considering needs and welfare of different stakeholders.

The third component, *moral motivation* (MM), involves prioritizing ethical action over other goals and needs. Rest (1984) defined moral motivation as pertaining to individuals' values priority or more specifically, the importance people give to moral values in contrast to other values.

Finally, the fourth component of Rest's model is *moral character* (MC). Rest (1984) defined moral character as having the courage of one's own convictions, having courage, persisting, overcoming distractions and obstacles, having skills for implementation, and having ego strength.

Most theories of morality described morality only in terms of moral reasoning/judgment despite the fact that moral reasoning/judgment alone constitutes only 20% of the concept of moral behavior (Rest, Narvaez, Thoma, & Bebeau, 2000). Rest suggested three additional components to increase the span of moral behavior (i.e., moral sensitivity, moral motivation, and moral character). However, Rest conceptualized these components as continuously and dynamically interacting to reflect moral behavior. Hence, he did not assess these components as skills essential to individuals. It seems reasonable, however, that the skills within each moral component could be examined to reveal moral progression.

This gap in Rest's conceptualization was addressed by Narvaez (2006) who proposed an empirically derived set of skills with further division of subskills for each component of morality. These skills are listed in Table 1. These skills are a mixture of the classic (courage), and modern virtues (perseverance). They also cater for virtues related to positive psychology (Peterson & Seligman, 2004). Although these inner psychological processes are likely to provide the best description of moral action/behavior, they did not

receive enough attention in empirical literature. Recently there has been a significant conceptual insight into each component of morality (i.e., moral sensitivity, judgment, motivation, and character) in different studies (Aybek, Çavdar, & Özabacı, 2015; Cohen, Panter, Turan, Morse, & Kim, 2014; Thornberg, Thornberg, Alamaa, & Daud, 2016; Wang, Lei, Liu, & Hu, 2016) For instance, moral sensitivity has been investigated with self-efficacy (Thornberg et al., 2016) and role conflict (Afifah, Sari, Anugerah, & Sanusi, 2015). Moral judgment has been studied a lot as the sole representation of morality based on Kohlbergian and neo-Kohlbergian approaches (Aybek et al., 2015; Wang et al., 2016).

A relatively small number of researches have explored moral motivation and moral character (Armstrong, Ketz, & Owsen, 2003; Cohen et al., 2014), probably because of measurement difficulties (Bebeau, 2002). Jordan (2007) stated that to measure moral sensitivity, a number of scales have been developed, perhaps this could be one of the reasons for the availability of a plethora of empirical research on moral sensitivity. Examples of these measures include, the Dental Ethical Sensitivity Test (Bebeau et al., 1985), the Racial Ethical Sensitivity Test (Brabeck et al., 2000) and, the Moral Sensitivity Scale for Supervision (Volker, 1984). Using these scales, a considerable amount of studies have been carried out to explore ethical sensitivity in multiple professions such as treatment and medication (Schluter, Winch, Holzhauser, & Henderson, 2008), business and accounting (Lysonski & Gaidis, 1991), medicine and dental education (Bebeau et al., 1985), racial and gender intolerance (Brabeck et al., 2000), and science (Fowler, Zeidler, & Sadler, 2009). The problem with these measures is that most of them are domain specific and may not be effective in a diverse context. Hence, it is time to construct a comprehensive yet precise instrument of morality addressing all the four components that is, moral sensitivity, moral judgment, moral motivation, and moral character.

The present study is designed to develop and validate an instrument of morality based on four components of morality in a generic context which may potentially be useful in different professional contexts. The resulting instrument may also be employed as a self-evaluation tool. More importantly, such an instrument will measure the morality experienced in face-to-face relationships and everyday life. We, therefore, generated an item pool on the basis of Narvaez's (2006) operationalization of the four components of morality measured by seven comprehensive dimensions for each component (Table 1).

## METHOD

### Instrument

Item pool was divided into four scales; each tapping a component of morality (i.e., MS, MJ, MM, and MC). Morality components were operationally defined using criteria described by Narvaez (2006). Items were generated based on the skills underlining each component of morality (see Table 1). Seven dimensions of MS were covered with 27 items whereas 50 items were generated to assess seven dimensions of MJ. MM was assessed with 48 items (also representing seven dimensions), and 55 items were generated to address seven dimensions of MC. All the items were responded to on a 4-point Likert scale from 1 = *strongly disagree* to 4 = *strongly agree*. Since morality is a general phenomenon valued highly across all cultures and societies, items were designed to avoid cultural influence. This may also enable a wider applicability of the resulting instrument in cross-cultural researches and its use in multicultural societies.

TABLE 1  
The four components of morality and related skill categories

Ethical sensitivity		Ethical motivation	
1.	Expressing emotions	1.	Respecting others
2.	Taking others' perspectives	2.	Conscience
3.	Caring and connecting	3.	Act responsibly
4.	Responding to diversity	4.	Helping others
5.	Controlling social bias	5.	Making peace
6.	Interpreting situations	6.	Valuing traditions and institutions
7.	Identifying consequences of actions	7.	Ethical identity and integrity
Ethical judgment		Ethical action	
1.	Understanding ethical problems	1.	Resolving conflicts and problems
2.	Using codes and judgment criteria	2.	Need identification
3.	Reasoning generally	3.	Taking initiative as a leader
4.	Reasoning ethically	4.	Perseverance
5.	Planning to implement decisions	5.	Courage
6.	Reflecting outcome	6.	Communicating well
7.	Optimism	7.	Work hard

#### Initial Item Appraisal Phase

In the next step, a group of five experts evaluated the items that were developed for the instrument. Determining the number of experts has always been partly subjective. At least five people are recommended in order to have sufficient control over chance agreement. The maximum number of judges has not been determined; however, it is unlikely that more than 10 people are involved in this phase, as the increase in number of experts also decreases probability of chance agreement (Lynn, 1986; Wynd, Schmidt, & Schaefer, 2003). All scales (MS, MJ, MM, and MC) were assessed using content validity index (CVI) to evaluate item significance on a 4-point ordinal scale (Lynn, 1986) from 1 = *lack of relevance* to 4 = *relevance at high degree*. Index of the inter-rating agreement about significance of items was as follows: If the CVI is higher than 80 percent, the item will be appropriate; if CVI is between 70 and 79 percent, items should be revised; and if it is less than 70 percent, item shall be eliminated (Abdollahpour, Nejat, Nourozian, & Majdzadeh, 2010). From the preliminary external assessment, not a single item was recommended by the panel of five experts to be eliminated from scales though several items were revised as per suggestions of the experts.

#### Pilot Study

The third major phase in development of the scale is to ensure that potential respondents can comprehend the items. Hence, the resulting item pool was administered to 15 volunteer college students. Students responded to the items on the questionnaires. We noted the responses of the students and observed their discussions at the end of the session about how they perceived and understood each item. They were asked to make opinions about item phrasing, lucidity of sentences, and coherent association of the items. Respondents of this pilot-testing established the items' suitability on a uniform 4-point rating scale with 4

expressing strongly agree to the response “*suitable and simple to comprehend.*” The evaluation of their responses showed that the participants did not face any difficulty in the comprehension of the item statements.

### Analysis Strategy

Two studies were conducted to compute the construct validity of a comprehensive instrument measuring morality (CIMM). Study 1 was conducted to explore the factor structure of four components of morality using exploratory factor analysis (EFA), and Study 2 was conducted to confirm factor structure using confirmatory factor analysis (CFA). Finally, alpha reliabilities of the final validated instrument were computed to estimate internal consistencies.

### STUDY 1

#### Sample

The item pool based on conceptualization of all four components was administered to 212 volunteer adolescents (31% female and 69% male). Adolescents were enrolled at an intermediate level of education in different private and government colleges of southern Punjab (Pakistan). The age range was from 15 years to 19 years with a mean age of 16.8 ( $SD = 0.99$ ) years (see Table 2). Thirty percent of adolescents reported that they belong to joint family system and 70% belonged to nuclear family system. Forty-five percent of adolescents were studying in public institutes and 55% in private institutes/colleges. Furthermore, 36% of adolescents came from rural areas and 64% adolescents reported that they came from urban areas. Authors approached administration of the academic institutions to obtain permission for sample recruitment. Students were guaranteed that their information would be kept confidential and would be utilized for the research purpose only. After taking informed consent, the questionnaire was administered to students. The paper-pencil questionnaire was distributed in students’ lecture halls in their leisure time either before or after their classes.

Prior to running EFA, the appropriateness of the data was estimated. The normality assumption was supported by absolute values of skewness and kurtosis ranging between +2 to -2.

TABLE 2  
Demographic and study variables

Variables	Study 1			Study 2		
	Females	Males	Total sample	Females	Males	Total sample
Gender	66 (31%)	146 (69%)	212 (100%)	402 (52%)	304 (43%)	706 (100%)
	<i>M (SD)</i>					
Age	17.0 (1.1)	16.8 (0.89)	16.8 (0.99)	17.0 (0.98)	17.1 (0.98)	17.1 (0.98)
MSS	59.92 (6.9)	58.2 (9.5)	58.79 (8.76)	64.6 (8.8)	69.0 (10.6)	66.4 (9.8)
MJS	120.7 (11.3)	120.2 (13.0)	120.2 (12.4)	123.5 (13.5)	133.7 (16.6)	127.7 (15.5)
MMS	54.1 (10.8)	53.0 (11.4)	53.4 (10.1)	107.2 (12.2)	113.2 (13.8)	109.8 (13.2)
MCS	73.2 (7.94)	72.3 (10.1)	72.6 (9.4)	70.0 (10.4)	77.8 (13.2)	73.5 (12.3)

Note. MSS = Moral Sensitivity Scale; MJS = Moral Judgment Scale; MMS = Moral Motivation Scale; MCS = Moral Character Scale.

### Exploratory Factor Analysis

Before conducting factor analysis, parallel analysis was executed in SPSS (v. 21) using the raw-par.sps script developed by O'Connor (2000) to identify the number of recommended factors. One thousand datasets were generated based on permutations of the raw data. This practice produces eigenvalues from the raw data along with the mean eigenvalues and eigenvalues representing the 95th percentile based on the Monte Carlo simulation. Item inclusion criteria in EFA were above .40. Multiloaded items (loading  $\geq .40$  on two or more factors) and single-item factors were also excluded.

For Moral Sensitivity Scale (MSS), parallel analysis suggested three factors with eigenvalues above the 95th percentile estimates created by the Monte Carlo simulation from the raw data. To further assess the possibility of a three-factor solution for MSS, principal component analysis with promax rotation was carried out specifying a three-factor solution. The three-factor solution showed sample adequacy with Kaiser-Meyer-Olkin (KMO) = .79 and significant Bartlett's test ( $p < .01$ ) also supported assumption of sphericity. Three meaningful factors from the data explained a total of 49.29% of the item variance. We analyzed and labeled these factors as: connecting and caring (6 items), responding to diversity (6 items), and interpreting situations (8 items). The factor loadings ranged from .41 to .83 (Table 3) proposing that all items were substantially contributing in respective factors (Hair, Hult, Ringle, & Sarstedt, 2016).

TABLE 3  
Factor structure of Moral Sensitivity Scale

Item No.	Factors/Items	Loadings	
		EFA	CFA
Connecting and caring			
1	I take care of the people working with me	.80	.66
2	I try to do things that please other people	.69	.71
3	I take care of the people working with me and also strive toward their betterment	.70	.78
4	I try to maintain good relations with individuals of my age group	.75	.82
5	Even in uncertain situations, I show reactions which aim to maintain good relations	.52	.74
6	I believe that we should take care of other people while working together	.62	.61
Responding to diversity			
7	I take care of other people's needs despite my personal interests	.45	.62
8	I take care how my daily routine affects other people	.54	.64
9	I do not mind my friends having different opinions	.43	.42
10	I show my bad feelings to others	.64	.31
11	I think that I remain unbiased in everyday matters	.42	.37
12	I try to understand the feelings of other people in uncertain situations	.41	.50
Interpreting situations			
13	I think about moral aspects of daily issues	.50	.62
14	I decide more attentively in matters of moral issues	.83	.70
15	I try to solve issues contain moral importance in different ways	.70	.88
16	I know how to express my emotions in uncertain situations	.48	.45
17	I regard other people's opinions while taking important decisions in life	.59	.57
18	I also try to understand the point of view of people whose opinions are contrary to my opinion	.51	.50
19	I am well aware of the moral aspects of issues faced in school	.46	.51
20	I think we should take care of ethical aspects in daily human interactions	.71	.71

For Moral Judgment Scale (MJS), parallel analysis indicated eigenvalues of four factors greater than 95% of percentile. Same statistical criteria (as applied on MSS) for factor analysis but with a four-factor solution explained a total of 40.37% of item variance, and retained 41 items. KMO of MJS was .73. Significance of Bartlett's test was observed at  $p < .01$ . The factor loadings ranged from .40 to .94. Factors were labeled as reasoning (10 items), understanding ethics (10 items), reflecting outcome (10 items), and planning to implement decisions (9 items) (Table 4).

TABLE 4  
Factor structure of Moral Judgement Scale

Item No.	Factors/Items	Loadings	
		EFA	CFA
Reasoning			
1	I am well aware of the purpose of my actions	.68	.51
2	I consider ethical aspects before presenting my opinions	.63	.58
3	I critically evaluate matters	.63	.63
4	I implement my decisions practically	.6	.44
5	I take guidance from the moral principles of my teachers in everyday matters	.38	.72
6	I consider all the aspects of a matter before taking an action	.94	.62
7	I think that I make decisions after considering all aspects of the matters	.52	.52
8	I give advice after considering the ethical aspects of matters	.48	.62
9	I follow moral principles in everyday matters	.47	.63
10	I consider myself sensitive to moral issues	.68	.43
Understanding ethics			
11	I obey the laws because I think it is a moral responsibility	.61	.62
12	I feel ashamed after telling a lie	.79	.56
13	I feel relaxed after telling the truth	.78	.62
14	I know problems arise only when we do not give importance to morality	.51	.45
15	I think all matters have a moral aspect	.49	.45
16	I understand moral principles	.50	.58
17	I think importance should be given to moral matters	.67	.71
18	I think it is immoral to take siblings' belongings without their permission	.43	.38
19	I think we should give importance to the ethical aspects of every matter	.77	.67
20	I give importance to the opinions of others in any situation	.55	.65
Reflecting outcome			
21	I keep in mind all the possible alternatives before making a decision	.78	.55
22	I use my resources to resolve issues	.76	.46
23	I gather all the necessary information about the problem to solve it.	.61	.61
24	I am careful in finding reasons for issues with moral concerns	.63	.57
25	I think about the different ways to solve problems	.59	.65
26	I am concerned about finding reasons of ethical issues	.54	.32
27	I keep in mind all possible results related to matters of moral importance	.54	.56
28	I critically evaluate hurdles specifically in ethical matters	.53	.47
29	I understand moral principles applying to everyday matters	.45	.63
30	I understand moral principles applying to everyday human interactions	.48	.66

(Table 4 continues)

Table 4 (continued)

Item No.	Factors/Items	Loadings	
		EFA	CFA
	Implement decisions		
31	I think decisions are biased when based on few facts	.55	.36
32	I think I spend sufficient time to make decisions	.61	.41
33	I think it is more difficult to make decisions according to moral principles	.52	.31
34	Usually while making decisions, I concentrate on two to three aspects of a matter	.40	.38
35	I think my decisions are appropriate and in accordance with set standards	.49	.46
36	My personal interest does not affect my decisions	.68	.44
37	My responsibilities do not affect my decisions	.44	.43
38	I need extra time to make decisions on ethically important matters	.51	.54
39	I think my decisions have moral significance	.58	.47

For Moral Motivation Scale (MMS), parallel analysis suggested four factors with eigenvalues greater than 95% of percentile. The EFA of MMS explained a total of 40.8% of item variance. KMO was .71; significance of Bartlett's test was observed at  $p < .01$ . Content analysis of the items supported presence of four meaningful factors consisting 34 items. Factors were labeled as respecting others (9 items), helping others and making peace (11 items), ethical identity (8 items), and act responsibly (6 items). The factor loading ranged from .41 to .81 (Table 5).

TABLE 5  
Factor structure of Moral Motivation Scale

Item No.	Factors/Items	Loadings	
		EFA	CFA
	Respecting others		
1	I say bad things about people in their absence	.81	.91
2	I often forget promises that I make to my friends	.63	.59
3	I often make fun of others	.71	.78
4	I blame others for bad results	.71	.61
5	I interrupt others' conversations	.73	.61
6	I perform my duties non-seriously	.41	.40
7	I try to avoid issues related to others	.80	.71
8	I can tell a lie whenever necessary	.57	.56
9	I can be unethical for the sake of my own benefit	.44	.40
	Helping and making peace		
10	I use my abilities to resolve my issues	.80	.68
11	I prefer to support others instead of moving ahead alone	.49	.53
12	I try to help others in any possible way	.67	.68
13	I give advice after considering it	.66	.67
14	I offer my services voluntarily	.74	.60
15	I avoid disagreeing even with people I dislike	.46	.37
16	I try to help others in difficult situations	.75	.64

(Table 5 continues)

Table 5 (continued)

Item No.	Factors/Items	Loadings	
		EFA	CFA
17	I like the traditions of my society	.48	.40
18	I give importance to my values/traditions	.53	.55
19	I fulfill others' expectations	.60	.64
20	I utilize my resources with full responsibility	.43	.60
	Ethical identity		
21	I prefer ethical rules to my own personal interests	.62	.47
22	I perceive myself as an ethically strong person	.55	.42
23	I think I should be thankful to others	.62	.41
24	I avoid doing things that could hurt others even if those things are in my personal interest	.52	.56
25	I wish to have peace even with those people whose actions are problematic for me	.49	.43
26	I think, I should be grateful in every situation	.51	.57
27	I follow my institution's values/traditions	.42	.55
28	I make decisions on the basis of my ethical rules	.51	.49
	Act responsibly		
29	I am always ready to perform my ethical role in any situation	.48	.67
30	I respect relationships	.62	.37
31	I complete my responsibilities seriously	.51	.63
32	I listen to others with full attention	.51	.72
33	I do my work with patience	.47	.67
34	I admit my faults if any	.43	.59

Parallel analysis of Moral Character Scale (MCS) suggested eight factors with eigenvalues greater than 95% of percentile. Exploratory factor analysis was executed with promax rotation and extraction was fixed to eight factors. The eight-factor solution explained 52% of item variance but content analysis of the factor solution deviated from the theoretical model of the study (Narvaez, 2006). Five of the eight factors corresponded well with theory but the other three factors (containing two items in each) failed to emerge as meaningful factors. Content analysis and assessment of scree plot further supported a five-factor solution. EFA was performed again specifying five factors. The five-factor solution explained a total of 40.70% of item variance and retained 32 items. KMO of MCS was .69; significance of Bartlett's test ( $p < .01$ ) was also observed. Five factors were labeled as courage and leadership (9 items), need identification and conflict resolution (8 items), communication (6 items), hard working (5 items), and perseverance (4 items). Item loading ranged from .41 to .74 (Table 6).

## STUDY 2

### Sample

For Study 2, data were collected from 706 adolescents (male: 304, female: 402). The age range was from 15 years to 19 years with a mean age of 17.1 ( $SD = 0.98$ ) years. They were enrolled at an intermediate

TABLE 6  
Factor structure of Moral Character Scale

Item No.	Factors/Items	Loadings	
		EFA	CFA
Courage and leadership			
1	I try to complete my work without any negligence	.44	.46
2	I always encourage me even when situations are out of my control	.65	.57
3	I have good leadership qualities	.66	.52
4	I do my work with devotion	.54	.61
5	I try to facilitate my friends while working with them	.65	.61
6	I am never afraid to say the right thing	.61	.58
7	I do whatever is right even when others are against it	.69	.46
8	I always do the right job even if it is difficult	.44	.56
9	I try my best to fulfill my responsibilities	.49	.67
Need identification and conflict resolution			
10	I settle my issues with great wisdom	.72	.63
11	When I take any action, I also take care of others' welfare	.67	.67
12	I properly plan before working things out	.66	.63
13	I give importance to others' feelings	.41	.61
14	I try to create balance between my needs and those of others	.48	.64
15	I want to make my own identity	.74	.66
16	I can communicate my point of view in a good way	.53	.59
17	I give importance to what others want	.44	.52
Communication			
18	I am not able to communicate properly	.73	.67
19	I am not able to communicate my point of view	.73	.70
20	I try to listen to other people rather than concentrating on my own point of view	.50	.52
21	I leave my work/duties unfinished	.32	.48
22	I think I often lose patience	.51	.32
23	I talk about ethics just to impress others	.46	.37
Hard working			
24	I worked hard for my success	.68	.76
25	I keep trying till I resolve issues	.48	.77
26	I do not get bored while working	.59	.53
27	I do not blame my fate when I am unable to achieve my goals	.42	.30
28	I think I can control my emotions and feelings while working	.47	.50
Perseverance			
29	I am not afraid to try something new	.45	.48
30	I give importance to the way to express things	.48	.46
31	I only choose those objectives which I can achieve	.53	.43
32	I can make the right decisions even in haste	.63	.40

level of education. Adolescents belonging to joint family system were 39.2% and 61.8% belonged to nuclear family system. A total of 45% adolescents studied in public institutes and 55% were studying in private institutes/colleges. For residence, an equal number of adolescents were living in each category (i.e., 50% urban and 50% rural).

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### Confirmatory Factor Analysis

The second study was aimed at validating the factor structure of all the four dimensions of CIMM (MS, MJ, MM, and MC) by using CFA. Factors were taken as latent variables and their items as observed indicators. In agreement with the integrative ethical education model (IEE; Narvaez, 2006), all latent constructs were allowed to covary. We used maximum likelihood (ML) estimation method for factor extraction. A nonsignificant chi-square is the prime indicator for assessing model fit in structural equation modeling (SEM) analysis (Cheung & Rensvold, 2002). However, because this index is influenced by the sample size (Bollen, 1989), we also considered the comparative fit index (CFI), incremental fit index (IFI), and Tucker-Lewis index (TLI). Root mean square error of approximation (RMSEA) values less than .08 and .05 suggest an adequate and good model fit, respectively (Marsh, Hau, & Wen, 2004), while RMSEA values in the range of .08 - .10 suggest an acceptable model fit (MacCallum, Browne, & Sugawara, 1996). CFI, IFI, and TLI values above .90 are generally considered to be indicative of a good model fit (Byrne, 1994).

The three-factor solution of MSS emerging in EFA was tested using CFA for its cross-validation of construct validity. Items were loaded on their particular factors in the model. Analysis conducted on the three-factor model of the MS showed less than optimal fit. Loadings on two items of the factor “responding to diversity” were less than .30 (Item 8 = .26, Item 2 = .22); both items were removed from the model, and errors were allowed to covary within the same factors. Model fit indices were reassessed which resulted in a good fit of the CFA model to the data with  $\chi^2 = 389.87$ ,  $df = 151$ ,  $p < .01$ ; CFI = .96; IFI = .96; TLI = .95; and RMSEA = .04. Item loadings on three factors were all above the threshold (i.e., ranging from .31 to .88). These results suggested that the three-factor measurement model of MS, consisting of 20 items, fits well with the observed data and supported adequate construct validity.

The four-factor solution extracted from EFA for MJS was further tested using CFA for its construct validity. Four factors were arranged into a single model and items were loaded on their particular factors. Analysis executed on the four-factor model of the MJ showed less than adequate fit indices (Table 7, default model). One item in the factor “reflecting outcome” ( $\lambda = .21$ ), and one item in the factor “reasoning” ( $\lambda = .24$ ) emerged as poor items with low loadings. Items were removed from further analysis and errors were allowed to covary. The resulting model showed a good fit of the model to the data with  $\chi^2 = 1332.47$ ,  $df = 644$ ,  $p < .01$ ; CFI = .93; IFI = .93; TLI = .92; and RMSEA = .03. Item loadings ranged from  $\lambda = .31$  to .72. These results supported the four-factor model of MJS with 39 items as its valid indicators.

Four factors of the 34 items of MMS resulting from EFA were further confirmed using CFA. A single model was designed including all the factors as latent variables. The results showed a good fit of the model to the data with item loadings ranging from  $\lambda = .37$  to .91. Values of fit indices,  $\chi^2 = 1034.85$ ,  $df = 487$ ,  $p < .01$ ; CFI = .94; IFI = .94; TLI = .93; and RMSEA = .04 suggested a good fit of the model to the data. These results supported the four-factor model of the MMS consisting 34 items as its valid indicators.

Five meaningful factors of MC extracted from EFA consisting 38 items were further confirmed by using CFA. All the five factors were designed into a single model and factor structure was tested using CFA. The default model of CFA showed less than optimal model fit. Item loadings were reviewed to identify poor items. The results showed that one item from “courage and leadership,” one item from “need identification and conflict resolution,” two items from “communication,” and one item from “perseverance” factor, showed item loadings less than .30. The items with low loading were removed and errors were allowed to covary. The resulting model showed a good fit of the model to the data with  $\chi^2 = 958.01$ ,

$df = 429$ ,  $p < .01$ ; CFI = .93; IFI = .93; TLI = .92; and RMSEA = .04. Item loadings ranged from  $\lambda = .30$  to .77. The results supported five-factor model of MC consisting 32 items as valid indicators of MC.

In the next step, a second-order CFA was conducted to investigate whether the four components of morality (i.e., MS, MJ, MM, and MC) are valid aspects of morality. Composite scores were computed for all subscales of the four components and were used as indicators of the four latent constructs. The second-order CFA resulted in acceptable fit of the model to the data with  $\chi^2 = 706.61$ ,  $df = 100$ ,  $p < .01$ ; CFI = .91; IFI = .91; TLI = .90; and RMSEA = .09. Examination of modification indices suggested some covariances between errors. Results reported in Table 8 showed that inclusion of the covariances resulted in significantly improved fit of the model to the data (i.e.,  $\chi^2 = 243.31$ ,  $df = 88$ ,  $p < .01$ ; CFI = .98; IFI = .98; TLI = .97; RMSEA = .04; with loading ranging from .16 to .91).

Reliability statistics were estimated to determine internal consistency of the final three factors of MS, four factors of MJ and MM each, and five factors of MC. Cronbach's alpha (reported in Table 9) ranged from .63 to .85 for the subscales of MS with an overall reliability of  $\alpha = .88$  for MSS. Cronbach's  $\alpha$  ranges of the four subscales of MJ were from .71 to .84 with an overall reliability estimate of  $\alpha = .88$  for MJS. Cronbach's alpha reliability of the four subscales of MM ranged from .64 to .84 with an overall reliability estimate of  $\alpha = .82$  for the MMS. Finally, Cronbach's alpha reliability ranged from .50 to .83 for the five factors of MC with an overall reliability estimate of  $\alpha = .84$  for the MCS.

Bivariate correlation coefficients between four components of morality (and also between their factors/subscales) were computed (Table 10). All the four components of morality were positively correlated with each other, ranging from  $r = .40$  to  $r = .68$ ,  $p < .01$ . Further analysis was conducted to examine differences between males and females on the four components of morality. Males reported to have more MS and MJ than females. Same results were observed for MM and MC (Table 11).

TABLE 7  
Models in CFA

Scales	Model in CFA	$\chi^2(df)$	IFI	TLI	CFI	RMSEA	$\Delta\chi^2(df)$
MSS	M1	1089.90 (206)	.85	.82	.84	.07	-
	M2	389.87 (151)	.96	.95	.96	.04	700.30 (55)
MJS	M1	3343.78 (773)	.71	.68	.71	.06	-
	M2	1332.47 (644)	.93	.92	.93	.03	2012.31 (129)
MMS	M1	1963.30 (521)	.84	.83	.84	.06	-
	M2	1034.85 (487)	.94	.93	.94	.04	928.45 (34)
MCS	M1	1919.91 (454)	.77	.73	.77	.06	-
	M2	958.01 (429)	.93	.92	.93	.04	961.90 (25)
Second-order CFA	M1	706.61 (100)	.91	.90	.91	.09	-
	M2	243.31 (88)	.98	.97	.98	.04	463.30 (12)

Note. MSS = Moral Sensitivity Scale; MJS = Moral Judgment Scale; MMS = Moral Motivation Scale; MCS = Moral Character Scale; M1 = default model; M2 = final model (after adding covariance).

TABLE 8  
Second-order factor structure of CIMM

Components/factors	Loadings
Moral Sensitivity Scale	
Connecting and caring	.78
Responding to diversity	.70
Interpreting situations	.91
Moral Judgment Scale	
Reasoning	.88
Implement decisions	.43
Understanding ethics	.74
Reflecting outcome	.90
Moral Motivation Scale	
Respecting others	.18
Helping and peace	.89
Ethical identity	.83
Act responsibly	.84
Moral Character Scale	
Courage and leadership	.87
Need identification and conflict resolution	.85
Communication	.16
Hard working	.67
Perseverance	.69

TABLE 9  
Reliability analysis

Components/factors	No of items	Cronbach's $\alpha$
Moral Sensitivity Scale	20	.88
Connecting and caring	6	.85
Responding to diversity	6	.63
Interpreting situations	8	.82
Moral Judgment Scale	39	.88
Reasoning	10	.78
Implement decisions	9	.71
Understanding ethics	10	.80
Reflecting outcome	10	.84
Moral Motivation Scale	34	.82
Respecting others	9	.84
Helping and peace	11	.84
Ethical identity	8	.75
Act responsibly	6	.64
Moral Character Scale	32	.84
Courage and leadership	9	.83
Need identification and conflict resolution	8	.82
Communication	6	.68
Hard working	5	.62
Perseverance	4	.50

TABLE 10  
Correlations among four components of morality and their factors

Subscales/Scales	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1 Connecting and caring	-	.51**	.69**	.82**	.52**	.54**	.15**	.54**	.53**	.43**	.49**	.12**	.44**	.45**	.47**	.46**	.05	.33**	.26**	.46**
2 Responding to diversity		-	.62**	.85**	.40**	.43**	.22**	.43**	.41**	.31**	.32**	.05	.38**	.29**	.23**	.28**	.07*	.27**	.29**	.34**
3 Interpreting situations			-	.91**	.55**	.55**	.24**	.58**	.60**	.48**	.45**	.06	.41**	.45**	.49**	.40**	.01	.35**	.26**	.46**
4 MSS				-	.52**	.59**	.25**	.66**	.63**	.49**	.47**	.05	.40**	.40**	.41**	.45**	.02	.33**	.39**	.42**
5 Reasoning					-	.67**	.31**	.79**	.88**	.65**	.61**	.10**	.60**	.63**	.53**	.52**	.03	.48**	.35**	.55**
6 Implement decisions						-	.23**	.63**	.84**	.54**	.52**	.13**	.55**	.55**	.47**	.43**	.04	.26**	.36**	.41**
7 Understanding ethics							-	.49**	.63**	.24**	.30**	.33**	.37**	.18**	.28**	.28**	.23**	.23**	.32**	.37**
8 Reflecting outcome								-	.89**	.62**	.61**	.05	.64**	.67**	.56**	.62**	.02	.43**	.43**	.63**
9 MJS									-	.61**	.64**	.07	.69**	.62**	.58**	.61**	.08*	.42**	.41**	.68**
10 Respecting others										-	.76**	.17**	.64**	.84**	.59**	.69**	.05	.46**	.46**	.57**
11 Helping and peace											-	.12**	.73**	.87**	.68**	.60**	.05	.50**	.44**	.61**
12 Ethical identity												-	.07	.47**	.15**	.17**	.37**	.13**	.05	.01
13 Act responsibly													-	.80**	.69**	.65**	.08*	.40**	.53**	.62**
14 MMS														-	.68**	.68**	.09	.51**	.42**	.64**
15 Courage and leadership															-	.75**	.07	.58**	.50**	.88**
16 Need identification and conflict resolution																-	.02	.49**	.55**	.79**
17 Communication																	-	.12**	.20**	.42**
18 Hard working																		-	.40**	.72**
19 Perseverance																			-	.73**
20 MCS																				-

Note. MSS = Moral Sensitivity Scale; MJS = Moral Judgment Scale; MMS = Moral Motivation Scale; MCS = Moral Character Scale.

\* $p < .05$ . \*\* $p < .01$ .

TABLE 11  
Mean, standard deviation, and *t*-values of of the dimension of morality across gender

Scales	Males ( <i>N</i> = 303)		Females ( <i>N</i> = 396)		<i>t</i>	<i>p</i>	95% CI		Cohen's <i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			LL	UL	
Moral Sensitivity	69.05	10.68	64.64	8.81	5.85	.00	2.93	5.89	0.47
Moral Judgment	133.71	16.17	123.51	13.53	8.77	.00	7.91	12.48	0.68
Moral Motivation	113.29	13.83	107.26	12.29	5.90	.00	4.02	8.04	0.47
Moral Character	77.88	13.24	70.08	10.46	7.91	.00	5.86	9.73	0.65

Note. CI = confidence interval; LL = lower limit; UL = upper limit.

## DISCUSSION AND CONCLUSION

Over the last years, issues of morality among young people have received universal attention from citizens, policy makers, parents, and educators (Berkowitz & Bier, 2004). Since ancient times, researchers have described and strived to assess morality (Gibbs, Basinger, Grime, & Snarey, 2007; Kohlberg, 1971; Kohlberg & Hersh, 1977; Lind, 2008) using a number of methods. Most of the studies explained morality as a unidimensional (moral judgment) concept resulting in discrepancies across studies (Rest et al., 1999). Rest and his colleagues made a broad input in studying morality by defining it as a multidimensional concept and clarifying that there are numerous concepts or inner processes that give birth to external moral behavior (Rest et al. 1999). This concept by Rest paved a new path of research on morality. Studies initiated to measure and define morality by these inner processes. The multidimensional concept of morality is comparatively new in psychology, and the exploration of components of morality is receiving the attention of researchers (Jordan, 2007). Researchers are still struggling with these components of morality mainly due to lack of measurement facilities. Though some instruments have been developed to measure moral sensitivity they are situational and domain specific, difficult to score, and based on diverse type of dilemmas (Cohen et al., 2011). They are difficult to handle and more importantly they do not explain the morality of everyday behavior.

Narvaez devised an integrative ethical education (IEE) model based on Rest's four components of morality (Narvaez, 2006). In her model, she described some general skills that play a role in the development and demonstration of psychological mechanisms of morality. On the basis of these operationally defined components and their indicators of measurement/skills, we developed a comprehensive instrument measuring morality (CIMM). The instrument individually measures MS, MJ, MM, and MC. Items were generated on the seven indicators defined by Narvaez for each component. Further, the factors were extracted using EFA and validated using CFA for each component of morality.

Construct validity of MSS with three factors was finalized through EFA and CFA consisting of 20 items. All factors were interpreted in the light of Narvaez's (2006) operational definitions of these factors. Factors caring and connecting, responding to diversity, and interpreting situations were extracted in parallel to the Narvaez (2006) conceptualization of MS. Four of the components of Narvaez conceptualization (i.e., expressing emotions, taking others perspective, controlling social biases, and identify consequences) did not emerge as independent factors in our data.

The MJS with 39 items was finalized using EFA and validated using CFA resulting in four meaningful factors. The content analysis of these factors showed that both ethical and general reasoning skills

merge into one factor though both were described as separated skills in Narvaez's IEE model. The factors, reflecting outcomes, planning to implement decisions, and understanding ethical problems, aligned with Narvaez's (2006) conceptualization of MJ. Other components of Narvaez's conceptualization of MJ (i.e., developing optimism, and using codes and judgmental criteria) were not supported as independent factors by our data.

MMS was also finalized with four factors. Skills related to helping others and making peace were merged and combined as one factor in our data. The explanation lies with the relationship between the two components as helping others is a means to achieve the end goal of making peace within the society. Conscientiousness, and valuing traditions and institutions are not validated as independently existing factors, but the remaining three factors, respecting others, ethical identity, and act responsibly are aligned with the IEE model by Narvaez (2006).

Factor analysis of MCS resulted in five meaningful factors consisting of 32 items. Items representing the factors courage and leadership merged into a single factor. Moreover, indicators of the factors need identification and conflict resolution also merged within same construct. The remaining three factors, communication well, perseverance, and work hard, appeared as independent factors. Consequently, seven dimensions of MC described by Narvaez (2006) were all represented in the five-factor solution.

The three factors for MSS, four factors for MJS and MMS, and five factors for MCS, were confirmed in CFA with excellent model fits. In addition, the factor structures of all four components represent most of the factors discussed by Narvaez (2006) in the IEE model of morality. Further, second-order CFA validated that the four components of morality with their indicators (factors) are valid dimensions of morality. Although the second-order CFA showed very good fit indices an indicator of MMS (i.e., respecting others) and an indicator of MCS (i.e., communication) appeared to have low loadings. These low loadings may have several justifications. First, a factor loading is always a supposed causal effect of a latent variable and an observed indicator, or — more modestly — the correlation between both. The “necessary” strength of the factor loadings depends on the theoretically assumed relationship between both — which in turn depends on the supposed meaning of the latent variable and the meaning of the observed variable. Hence, factors with low loadings may be justified for their theoretical importance. The two factors with low loadings are not only theoretically justified (Narvaez, 2006), their empirical independent existence within their respective dimension of morality also signifies the importance of these factors within the framework of morality. Secondly, only these subscales (communication well and respecting others) were measured with negative (reverse scored) items whereas items of all other subscales were positively scored.

Cronbach's  $\alpha$  reliability of MS, MJ, MM and MC scales and their subscales also ranged from moderate to high except for the perseverance subscale of MC. Although subscales with such a low reliability with fewer items could not produce a sufficient amount of information regarding their specific dimension it is not unusual for scales with few items to have lower Cronbach's  $\alpha$  (Cahill, Freeland-Graves, Shah, Lu, & Klohe-Lehman, 2009). Furthermore, the scale was retained as the subscale of MCS because of its theoretical importance as it was introduced in the IEE model as a separate and important factor to determine MC. We recommend that further studies explore this dimension with variant indicators to find best indicators.

Mean differences on all four components of morality (MS, MJ, MM, and MC) were also explored. On all the four components of morality, males were significantly higher than females. In previous literature, gender differences were not explored on the four components of morality. From the very beginning, Kohlberg has been considered the founder of gender differences on morality (Kohlberg & Hersh, 1977). He explained that men are on higher stages of moral development than women. But later, Gilligan, Ward,

McLean Taylor, and Bardige (1988) challenged Kohlberg's claims to gender differences. They hypothesized that men are more likely to consider moral dilemmas chiefly in terms of justice and individual rights whereas women are more likely to be concerned with questions of care and relationships with others. Research also reveals that both principles of justice and care are involved in moral reasoning and both are used by males and females to resolve an ethical dilemma (Brabeck, 2016). Recent meta-analytic studies (Bebeau & Brabeck, 1987; You, Maeda, & Bebeau, 2011) have found small but significant gender differences with women scoring higher on ethical sensitivity. A study by the DeWolfe, Jackson, and Winterberger (1988) reported that males were significantly higher in moral reasoning and moral character than females.

In conclusion, following Rest's four-component model, the present study developed a comprehensive instrument of morality based on Narvaez's theoretical operationalization of four components of morality. Psychometric properties clearly illustrate that newly constructed scales are a reliable measurement of morality. Consequently, the study resulted in the development of an expedient and user-friendly measure incorporating all four components of morality that could be applicable in multiple settings and to multiple age groups of the general population.

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