

Operationalizing Wisdom: Family-Pattern Predictors, Outcomes, and the Addition of Integrity to the SD-WISE Scale

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Abstract

In the 21st century researchers are attempting to conceptualize and operationalize one of the most ancient of all qualities—wisdom. The present study builds on the efforts of a research team from The University of California, San Diego and their assessment instrument, the SD-WISE scale. The SD-WISE scale proposes that wisdom is the composite of seven qualities (social advising, emotional regulation, pro-social behavior, insight/self-reflection, tolerance, decisiveness, and spirituality). The present study augments their scale by the inclusion of an eighth quality, integrity, and increases the number of indicators to measure each construct. Further augmentation introduces childhood family patterns and Karen Horney's concept of Healthy Friction as predictors of wisdom. Life Satisfaction and Friendship Quality were the primary outcome variables. With a data set of 3292 paired into 1646 main participants-informant dyads the present study explored this new model. Results provided support for all the San Diego findings where direct comparisons were possible. Integrity proved to be highly correlated with the seven qualities used in the San Diego studies. Healthy Friction was found to be the greatest single predictor of both Wisdom and Life Satisfaction. Many of the 43 family patterns were also strong predictors with *emotional health of the family* and *playing outdoors* being the greatest contributors. On the negative side, *conflict in the home* and *criticism* had a universally destructive effect on wisdom and its component parts. This negative effect was augmented by modern phenomena: *time in front of a screen* and *playing with electronic devices*. Results are discussed and avenues for future research are explored.

Key words. Wisdom, SD-WISE-28, integrity, healthy friction, family patterns, emotional regulation, spirituality, life satisfaction

Operationalizing Wisdom: Family-Pattern Predictors, Outcomes, and the Addition of Integrity to the SD-WISE Scale

Wisdom is a concept that occurs in the most ancient written documents. From antiquity to the modern day, wisdom and its importance has been discussed and debated. Great religious leaders have celebrated wisdom (Confucius¹, Buddha², Moses³, Solomon⁴, Jesus⁵, Paul⁶); wisdom has been a forefront topic of the great philosophers (Socrates⁷, Plato⁸, Aristotle⁹, Cicero¹⁰, Augustine¹¹, Aquinas¹²) and has continued to be prominent in the discussions of more recent thinkers and philosophers (Erasmus¹³, Montaigne¹⁴, Kant¹⁵, Nietzsche¹⁶, Nussbaum¹⁷). Wisdom has been difficult to define, and over the ages, many qualities have been associated with wisdom. Some of the most prominent include wise counsel (Buddha¹⁸, Confucius¹⁹, Solomon²⁰); keen insight into the nature of people and situations—often based on self-reflection and deep contemplation (Solomon²⁰, Aristotle²¹, Aquinas²², Erasmus²³, Nietzsche²⁴) a spiritual foundation for wisdom (Solomon²⁵, Augustine²⁶, Aquinas²⁷, the Bhagavad Gita²⁸), integrity (Job²⁹, David³⁰, Solomon³¹, Augustine³², Aquinas³³, Kant³⁴); doing good, or pro-social behavior (Egyptian philosophies³⁵, Confucius³⁶, Jesus³⁷, other Biblical writers³⁸); not just understanding but taking action based on wisdom (Moses³⁹, Solomon⁴⁰, Jesus⁴¹, Kant⁴²); and emotional regulation—a modern term described in many different ways (“one who rules over his own spirit” Proverbs 16:32) by the ancients (Solomon⁴³, other Biblical writers⁴⁴, Cicero⁴⁵, Nietzsche⁴⁶, modern psychologists⁴⁷). (Note: references for the 61 citations of ancient sources are included in supplemental material)

One of the more nuanced wisdom concepts is the idea of “intellectual humility” a phrase coined by Montaigne⁴⁸. Socrates⁴⁹ states that he is wise because he recognizes his own ignorance. Other concepts that fall into a similar framework include listening to advice (Solomon⁵⁰), being accepting of discipline (Solomon⁵¹) being tolerant of those who differ from you (Paul⁵²), and accepting the insights of others (Jesus⁵³). Finally, there are two different ways that wisdom has been partitioned over the years. Socrates⁵⁴

speaks of theoretical versus practical wisdom; essentially that which is thought versus that which is applied. We find that both the practical and the theoretical are integrated into the current wisdom instruments; it is axiomatic that effective practice grows out of sound theory. We refer you to Jeste and Lee (2019) who provide an even more extensive look at the historical underpinnings of wisdom.

In the 21st century, a number of researchers have attempted to conceptualize and measure wisdom. There is little commonality in these scales and a brief review is in order. Ardelt (2003, 2011) created the 3D-WS (3-Dimensional Wisdom Scale) and proposed wisdom as a combination of three qualities: cognition, reflection, and emotion. Webster (2003, 2007) proposed the SAWS (Self-Assessment Wisdom Scale) suggesting that wisdom is composed of five qualities: critical life experiences, openness, emotional regulation, reflectiveness, and humor. Brown (2004a, 2004b, 2006) created the WDS (Wisdom Development Scale) a wisdom measure based on semi-structured interviews with six factors: self-knowledge, interpersonal understanding, sound judgment, life knowledge, life skills, and willingness to learn. Curnow (1999) and Levenson and colleagues (2005) promoted the ASTI (Adult Self-Transcendent Inventory) to measure wisdom based on four constructs: self knowledge, non-attachment, integration, self-transcendence. Glück and colleagues (2013) are responsible for the BWSS (The Brief Wisdom Screening Scale) suggesting four components of wisdom: self transcendence, emotional regulation, openness, and reflectiveness. Then, Brienza and colleagues (2018) crafted the SWIS (The Situated Wise Reasoning Scale) that made some effort to integrate components of prior scales and included: others' perspective, openness to change, intellectual humility, ability to compromise, and viewing the event through the vantage point of another. Of 27 individual qualities from these six instruments, there are only four (reflection, openness, emotional regulation, and self-transcendence) that are shared with at least one other scale.

A more recent series of articles attracted the attention of the present authors. A research team from The University of California, San Diego has explored qualities that comprise wisdom (e.g., Jeste & Lee, 2019; Thomas, Bangen et al., 2019; Jeste, Thomas et al., 2021). We refer to these three articles as “the San Diego studies”. The San Diego studies in their effort to operationalize wisdom considered many of the ancient concepts of wisdom and created a scale that was more congruent with the values discussed in the first few paragraphs of this paper. They also considered the neurobiological foundations of wisdom. For instance, drawing from both neuroimaging studies and older events that document the effects of specific types of brain injury, they identified that certain components of wisdom are associated with specific areas of the brain (Thomas, Bangen et al., 2019).

Their instrument is called the SD-WISE scale and initially included six components of wisdom: social advising, emotional regulation, pro-social behavior, insight/self-reflection, tolerance, and decisiveness (Thomas, Bangen et al., 2019). Two years later they included a seventh component of wisdom, spirituality (Jeste, Thomas et al., 2021). All seven of their constructs are included many times in the ancient conceptualizations of wisdom.

We employed the San Diego studies as the springboard to launch the present research. In their articles, the San Diego team acknowledge the difficulties of operationalizing and researching wisdom, but set forth a “provocative” challenge (Jeste & Lee, 2019; p 2):

We believe that wisdom is in the early stages of moving from this once-dismissed to later-embraced list of constructs that are amenable to empirical research. This article is intended to be a call for additional research to explore, test, confirm, disprove, or revise specific hypotheses proposed and thereby refine the conceptualization of wisdom.

The present study takes up that challenge. The following innovations are introduced to move the study of wisdom another step forward.

New Innovations

Inclusion of Integrity. From antiquity, scrupulous integrity has been considered intrinsic to wisdom (e.g., David⁵⁵, Solomon⁵⁶, Confucius⁵⁷, Paul⁵⁸, Augustine⁵⁹, Aquinas⁶⁰, Kant⁶¹). The American Psychological Association operationalized integrity as “the quality of moral consistency, honesty, and truthfulness with oneself and others” (APA Dictionary of Psychology, 2018). The present study augments the SD-WISE scale from seven to eight constructs with the inclusion of integrity.

Strengthen the indicators of wisdom components. The San Diego team employed 28 questions (four questions for each construct) in their SD-WISE scale. As we observed those 28 questions, we felt that the measures could be improved by additional questions that probed more deeply. For sake of replication, the present study kept all 28 of the original-scale items but added additional questions to strengthen the measures. Also, the inclusion of Integrity required eight new questions to measure that construct.

Outcome variables. Outcome variables was not the primary focus of the San Diego studies. Even though the importance of outcome variables was fully acknowledged, “Emerging research suggests that wisdom is linked to better overall health, well-being, happiness, life satisfaction, and resilience” (Thomas, Bangen et al., 2019). In the present study we measure life satisfaction and quality of friendships as important outcome variables.

Types of analysis. In this study we parallel the statistical procedures of the San Diego studies by use of measures of internal consistency, Confirmatory Factor Analysis in crafting wisdom and its component parts. Also, this study is cross-sectional and correlational, just like the San Diego studies.

Data set. The Thomas, Bangen and colleagues (2019) study employed a data set of 524 community-dwelling adults. The Jeste, Thomas and colleagues (2021) study included a sample of 1786 community-dwelling adults. The sample size of the present study is 3292 but is grouped into 1646 participant-informant dyads. However, 59% (N = 959 dyads) of the present sample are university students, the other 41% (N = 687) are community-dwelling adults.

Increased objectivity through participant-informant dyads. To control for social-desirability bias and to create more objective responses, the main participant answered questions about him or herself and a friend of the main participant (“informant”) was recruited to answer selected questions about the main participant. Then the mean of the two responses created the variables used in the study. See Cruitt and Oltmanns (2018) for a discussion of the benefits of informant scores for increasing objectivity.

Predictor variables. What factors make one wise? The present study explores two sources: a series of 43 childhood family patterns that participants experienced during the first 18 years of their lives, and the Karen Horney concept of healthy friction. Since Horney’s concept of healthy friction has not been used in recent research we expand on it here.

Karen Horney and healthy friction. Karen Horney died in 1952, but her ideas remain vivid and relevant. In her 1950 book *Neurosis and Human Growth*, Horney identified two factors that, over the life span, lead to self-realization: a nurturing environment and healthy friction. She defines healthy friction as recognizing and resolving difficulties that we face.

To experience conflicts knowingly, though it may be distressing, can be an invaluable asset. The more we face our own conflicts and seek out our own solutions, the more inner freedom and strength we will gain. Only when we are willing to bear the brunt can we approximate the ideal of being the captain of our

ship. Spurious tranquillity rooted in inner dullness is anything but enviable. It is bound to make us weak and an easy prey to any kind of influence. [Horney, 1942/Goodson, 1946]

Since healthy friction has not been operationalized in recent research, we crafted an instrument to define healthy friction as a potential predictor of Wisdom, or, at least a predictor of certain components of Wisdom. It is also sought to see if there are constructs similar to healthy friction in the literature.

The only variable that parallels the idea of healthy friction is Kobasa's (1979) concept of hardiness. Kobasa identifies hardiness as "the set of attitudes that make people stress resistant. These attitudes include a sense commitment, a positive response to challenge, and an internal sense of control." The contrast between Healthy Friction and Hardiness is that Hardiness represents a mental attitude toward challenging circumstances; Healthy Friction is a track-record of successfully addressing and resolving many difficulties over time. This parallels the conceptualization of self actualization as proposed by Carl Rogers (an inner drive) and Abraham Maslow (an accomplishment). The concepts, however, are related and we would anticipate that the impact of hardiness and healthy friction would be similar.

Objectives of the Present Study

Objectives include: (a) Replicate several aspects of the San Diego studies to confirm their validity; (b) Explore the inclusion of Integrity as one of the components of wisdom, then measure it's internal consistency and intercorrelations with other wisdom-components; (c) Expand the questions used in the measurement of wisdom to create a more in-depth analysis; (d) explore the statistical impact of the wisdom variable and it's components on Life Satisfaction and Friendship Quality; (e) Explore the impact of Healthy Friction and the 43 childhood family patterns on wisdom, it's components, life satisfaction, and friendship quality.

Method

Participants

Valid data from 3292 subjects was acquired. They were grouped into dyads—1646 main participants and 1646 friends of the participants (often referred to as “informants”) who answered the same questions but about the main participant (not themselves) to create greater objectivity on responses. Gender balance showed 924 men (28%), 2359 women (72%) and 9 who identified themselves as non-binary (.3%).

Other demographics refer to the main participants only. The ethnic composition included 81% Whites, 11% African Americans, 2% Asians, 4% Hispanics, and 2% Decline to State or other. The mean age of main participants was 31.4 years (range 18 - 78). The mean income of participants (family income for students) was approximately \$116K (range <\$20K to >\$200K), Religious preference included 49% Protestants, 31% Catholics, 8% agnostics, 5% Atheists, and 7% others. Participants averaged 2.6 years of college (range <HS to doctorate). Participants originated from 43 US states and 8 foreign countries.

This study was approved by the university Institutional Review Board prior to data collection. The link to the data set and other supplemental materials follows:

[place the link to the data set and supplemental material here]

Materials and Procedures

Participants were recruited by undergraduate students in a large public university research-methods class. The students completed CITI ethics training and were certified to collect data in exchange for partial class credit. Initial contacts with potential participants were made in person, by telephone, e-mail, or social media. Questionnaires were administered to all participants through an internet link to a Qualtrics survey. Participants did not receive any compensation other than expression of appreciation for their contribution.

To ensure data quality and integrity, responses were screened prior to analysis. Participants were excluded if there was no informant to match a main participant, if

there were indications of invalid responding, including insufficient completion time, excessive missing data, idiosyncratic or inconsistent response patterns, or duplicate IP addresses. All cases failing to meet the inclusion criteria were removed from the final data set.

Main participant questionnaire. The questionnaires were structured as follows: The first screen included instructions that identified the sponsoring organization, briefly described the study, assured anonymity, explained informed consent, and included debriefing information plus additional material required by the IRB. These Instructions were followed by 10 demographic items, then a table that measured the frequency of 43 childhood family activities and homelife characteristics, then 8 questions that assessed Healthy Friction". This was followed by 69 items (randomly distributed) that measured the eight components of wisdom and finished with 11 items that measured Life Satisfaction and Friendship Quality.

Informant questionnaire. The informant questionnaire paralleled the main participant questionnaire in structure and format with the following exceptions. (a) each question instead of "you" utilized "your friend" in the wording. There were, of course, instances of rewording of items based on the nature of the question. Example: Main Participant "How good are you at perceiving how others are feeling?" Informant: "How good is your friend at perceiving how others are feeling?" The informants did not answer the demographic questions except for gender, nor did they rate the 43 family patterns.

Items Designed to Measure Wisdom

Background and new innovations. As mentioned in the introduction, the 2019 study posited Wisdom as composed of six components: Social Advising, Decisiveness, Pro-social Behaviors, Emotional Regulation, Tolerance, and Self Reflection. The 2021 study included the original six but added Spirituality. The present study has expanded the operational definition to include one more component, Integrity. The 2021 study created a questionnaire that utilized four indicators for each of the seven components of

wisdom; our study has expanded this model to include eight or nine indicators of each of the eight components of wisdom. The use of a greater number of indicators to enhance validity of composite variables has a long history of support in correlational research [e.g., Curtis & Jackson, 1962; Kluegel, Singleton, & Starnes, 1977; Pawson, 1980]. The present study also includes all 28 indicators used in the SD-WISE scale for sake of comparison. A total of 69 randomly ordered questions assessed these eight components; 20 of them were reverse coded to moderate response biases.

Scoring the eight components of Wisdom. Each of the eight wisdom components was the mean of the items that measured it. For each of the wisdom indicators, the four questions employed by the San Diego team were included; additional question were added to create better internal consistency. Following measurement of internal consistency items that were poorly correlated with the overall scale were typically deleted—sometimes resulting in a different number of items for different constructs. These included Social Advising (7 items), Decisiveness (8 items), Prosocial Behavior (8 items), Emotional Regulation (9 items), Tolerance (5 items), Spirituality (8 items), Self reflection (7 items), and Integrity (8 items). All items used in the questionnaire are included in the *Supplemental-Material* link presented earlier.

For all eight qualities, the indicators were scored on 7-point Likert scales. Each question measured agreement or disagreement with each statement. The anchors for the 7-point scales varied from time to time to make the response clear. The final measure of each quality was the mean of the items that measured it.

While we refer readers to the San Diego studies to provide the theoretical basis for each measurement instrument of the seven qualities included in their research, we do spend time to present greater detail on the measure of Integrity. First, the justification for use of this eighth component was based on how frequently, over the millennia, integrity was used as a central construct of wisdom—as cited in the introduction of this paper. The eight questions used as indicators in the present study were selected and

adapted from Schlenker's (2008) 13-item measure of integrity. The measurement procedure was identical to other wisdom indicators as described in the previous paragraph.

Predictor Variables: Healthy Friction and Childhood Family Patterns

Healthy Friction. Four pairs of questions were presented to the main participants. The four pairs of questions were identical except for the area of life they applied to. For example, the first pair dealt with the issue of *physical challenges* and read, "In general, do you feel you have experienced more physical challenges (such as frequent illness, injury, handicaps) than other people?" Participants responded on a 7-point scale with anchors of (1) *Fewer physical challenges than others*, (4) *about the same*, (7) *More Physical challenges than others*. The paired question read, "As you look back over your life, what have been the results of your efforts to resolve these *physical challenges*?" Participants responded on a different 7-point scale with anchors of (1) *I have been hurt or diminished*, (4) *the good is balanced by the bad*, (7) *I have benefitted*.

Then the identical questions were asked about (a) *personal problems or challenges* (such as emotional health, anxiety, meaning of life, spirituality), (b) *difficulties in relationships*, and (c) *problems in achieving important goals*.

The variables used in the study included *Challenges* and *Resolutions*. *Challenges* was the mean of the first-question responses across the four areas and operated on a scale of (1) *few challenges* to (7) *many challenges*. *Resolutions* was the mean of the resolution questions across the four areas and operated on a scale of (1) *poor resolution* to (7) *Excellent resolution*.

Childhood family patterns. In a pilot study with a large research-methods class, students assisted us by identifying childhood family patterns (called "Family Patterns" throughout the paper) that might have an impact on Wisdom or its component parts. The authors sorted through several hundred ideas and eventually settled on 43 family patterns. In text that follows we provide only a few examples in each category; we

include the entire set of family practices in the *Supplemental Material* link. Childhood was operationalized as “during the first 18 years of your life”.

Specific activities. Thirty-four of the 43 represented activities that could be specified as an action such as play outdoors, celebrate holidays together, attend church, participate in competitive sports, spend time in nature and so forth. The 34 included traditionally positive types of activities (such as the items mentioned above) but also included traditionally negative activities such as criticism, smoking, use of prescription drugs, children unsupervised, number of moves, and so forth. Participants rated the frequency of these activities on a 7-point scale of (1) *Never/rare* to (7) *Frequent*.

Qualities that characterized the home. The other nine might be identified as “states of being” rather than actual activities and included items such as emotional health of the family, quality of the parent-child relationship, quality of diet, quality of parent-parent relationship, level of conflict in the home and others. The 7-point scale for these included anchors of (1) *Poor* to (7) *Excellent*.

Outcome Variables: Life Satisfaction and Friendship Quality

Life Satisfaction. Life Satisfaction was measured with a modified version of the Extended Satisfaction with Life Scale (ESWLS; Alfonso et al., 1996) that included nine specific areas in which most people are highly defined followed by two global questions. Participants rated how satisfied or dissatisfied they were (1 = *Very Dissatisfied*; 7 = *Very Satisfied*) within nine areas of their life: financial, social network of friends, family interactions, intimate relationships, spiritual/existential, professional/career/academic, interests/passions, health/vitality, and goal-achievement success. These were followed by two questions, “*Overall how satisfied are you with your life?*” rated on the same scale; and “*If you had your life to live over, would you make many changes?*” on a 1 = *few changes* to 7 = *many changes* scale. The eleven items were averaged to measure Life Satisfaction.

Friendship Quality. The questionnaire was long, and authors decided to simply use the three questions from the Life Satisfaction measure associated with friendships: Quality of the social network of friends, quality of family interactions, and quality of intimate relationships. Clearly the Friendship-Quality variable is linearly dependent with the Life Satisfaction variable. Hence the two variables will be used independently with no effort to show the relationship between them.

Analytic Strategy. The concern of this paper is to move forward one more step in the quest to operationalize Wisdom. We begin with the research of the San Diego studies and the seven components of wisdom they propose. Methods to confirm validity of the San Diego studies include (a) consistency of correlations of their seven (eight) components with primary dependent variables: Life Satisfaction, Friendship Quality, Challenges, and Resolutions, (b) use of confirmatory factor analysis to see if the expanded measures of each component (from their 4 items per construct to 5-9 items in the present study) result in the same factor structure, and (c) consider the internal consistency of the seven (eight) wisdom components. With the addition of Integrity to the scale the factor analysis adds an exploratory component to the otherwise confirmatory process.

In addition, we consider standard psychometric concerns of normality of data and internal consistency of multiple-indicator variables, analyze the impact of demographics, and, for family patterns we determine bivariate correlations and beta weights from regression equations to determine the impact of specific family patterns on (yes, causality is clear) on primary dependent variables and the eight components of wisdom.

Results

Normality of data. Across all variables Skewness and Kurtosis values resided in the ideal range of between ± 1 . The only violation was the often-skewed age variable which was barely outside the ideal range with a skewness of 1.09. See George and Mallory (2024) for a discussion of psychometric validity.

Internal consistency of multiple-indicator variables. In general Alpha values were high ranging from .81 to .93 for all but three of the composite variables. **Table 1** lists all composite variables, the number of indicators, the alpha value, and in some cases additional comments.

Table 1. N and internal consistency of multiple-indicator variables

Variable	# of items	alpha	comment
Social Advising	7	.87	
Decisiveness	8	.88	
Pro-social Behavior	8	.85	
Emotional Regulation	8	.87	
Tolerance	5	.84	Tolerance proved to be one of the most difficult to measure, had the least impact on outcome variables, and required deletion of three questions to create reasonable internal consistency.
Spirituality	8	.93	Spirituality had the highest alpha, but the lowest <i>corrected item-total correlation</i> of all the wisdom indicators.
Self Reflection	7	.86	
Integrity	8	.81	
WISDOM	8	.83	
Life Satisfaction	11	.88	Very high internal consistency for a life-satisfaction measure
Friendship Quality	3	.58	not impressive, and the alpha improved to .64 if intimate relationships was not included.
Challenges	4	.72	
Resolutions	4	.79	

The Impact of Demographics

Gender differences. Men and women scored differently on several of the items; since the large sample size sometimes creates significant but unimportant differences, we report only differences of Cohen's d with a magnitude greater than .20. Significance is $< .001$ for all reported differences. To simplify output, we report only Cohen's d values; see **Table 2** for mean differences, t , and degrees of freedom. Women scored higher on Social Advising ($d = -.44$), Self Reflection ($d = -.35$), Integrity ($d = -.28$),

Spirituality ($d = -.26$), Pro-Social Behavior ($d = -.26$), and Tolerance ($d = -.23$), Men scored higher on Emotional Regulation ($d = .27$).

Table 2. Gender differences

	Men	Women	t	df	1-tail sig	Cohen's <i>d</i>
LIFE SATISFACTION	5.18	5.27	-1.835	1638	.033	-.11
FRIENDSHIPS QUALITY	5.27	5.34	-1.193	1638	.117	-.07
TROUBLES	3.61	3.70	-1.601	1638	.055	-.09
RESOLUTIONS	4.76	4.71	1.087	1638	.139	.06
SOCIAL ADVISING	5.04	5.40	-7.836	1633	<.001	-.44
DECISIVENESS	4.63	4.48	2.799	1634	.003	.16
PRO-SOCIAL BEHAVIOR	5.55	5.76	-4.763	1638	<.001	-.26
EMOTIONAL	4.63	4.37	4.785	1638	<.001	.27
TOLERANCE	5.33	5.53	-3.994	1638	<.001	-.23
SPIRITUALITY	4.90	5.10	-2.702	1638	.003	-.26
SELF REFLECTION	5.24	5.44	-4.263	1638	<.001	-.35
INTEGRITY	5.07	5.20	-3.107	1638	<.001	-.28

Education. Education was positively associated with all 13 primary variables. Since the large data set allows a correlation as small as .05 to be significant, we list only outcomes with r -values higher than .12 (all significance values are $p < .0001$). More education is associated with more decisiveness ($r = .22$), better Emotional Regulation ($r = .21$), greater Wisdom ($r = .20$), higher Integrity ($r = .16$), better Life Satisfaction ($r = .16$), fewer Challenges ($r = -.15$), better Social Advising ($r = .15$), better Friendship Quality ($r = .14$), greater ability at Resolving problems ($r = .13$), and more Prosocial Behavior ($r = .13$).

Religious preference. For this analysis we combined Agnostics and Atheists into a single group. The “Other” category was substantial (7.6% of the data set) and very diverse, encompassing just about every major world religion; however, their numbers were too few for meaningful contrasts with other groups. For comparisons we included only Protestants, Catholics and the Agnostic/Atheist category. Across all 13 categories, with the exception of Self reflection, the A/A group scored significantly lower than Protestants and Catholics. The only contrast is that the A/A group scored higher on

number of Challenges. Protestants scored differently from Catholics occasionally, but without any patterns that sparked interest. Of the 12 (A/A vs. Protestant or Catholic) differences, 11 of them were significant at a $p < .001$ level with F values ranging from 5.92 to 259.91; Cohen's d values ranged from .20 to 2.18 (for spirituality).

Age. Despite a distribution skewed toward younger participants (due to the large number of students in the sample), just like the San Diego studies, age was found to be positively correlated with a number of wisdom components. All significance values are $< .001$; we list only correlations $> .10$ (all significance values are $p < .0001$). Being older is associated with being more Decisive ($r = .31$), having better Emotional Regulation ($r = .21$), greater Integrity ($r = .21$), greater Wisdom ($r = .20$), higher levels of Spirituality ($r = .19$), more Prosocial Behavior ($r = .18$), having better Friendship Quality ($r = .10$), and experiencing fewer Challenges ($r = -.10$). However, older people were significantly less Tolerant ($r = -.09$). Age had no impact on Life Satisfaction, Resolutions, Social Advising, or Self-Reflection.

The Broad Strokes: Bivariate Correlations

Bivariate correlations often reveal relationships between variables that prove to be major players in more advanced types of analyses. To simplify output, all correlations are significant at a $p < .001$ level, $N = 1646$ dyads.

Life Satisfaction. Life Satisfaction is significantly associated with all 11 of the other variables. Rank ordered, greater Life Satisfaction is associated with more Wisdom ($r = .44$), better Emotional Regulation ($r = .41$), greater Decisiveness ($r = .40$), more effective Resolutions ($r = .39$), fewer Challenges ($r = -.33$), greater Integrity ($r = .32$), higher Spirituality ($r = .31$), more Prosocial Behavior ($r = .30$), better Social Advising ($r = .29$), more Self-Reflection ($r = .19$), and greater Tolerance ($r = .14$).

Friendship Quality. Friendship Quality is also associated with all 11 of the other variables but at more modest levels and in a different order. All significance values are $< .001$. Rank ordered, Friendship Quality is associated with more Wisdom ($r = .35$),

better ability to resolve Challenges ($r = .33$), better Emotional Regulation ($r = .32$), fewer Challenges ($r = -.29$), being more Decisive ($r = .29$), more Prosocial Behavior ($r = .27$), greater Integrity ($r = .26$), better Social Advising ($r = .24$), higher Spirituality ($r = .23$), more Self-Reflection ($r = .14$), and greater Tolerance ($r = .13$).

Healthy friction: number of challenges and resolution of those challenges.

Recall that there are two variables associated with healthy friction: Number of difficulties (“Challenges”) and effectiveness at solving those difficulties (“Resolutions”). First, the two constructs are robustly and negatively correlated with each other ($r = -.41$, $p < .001$); that is, the more challenges one has the less effective they are at resolving them. A positive correlation of Resolutions with key output variables is desirable; for Challenges, a negative correlation with key output variables is equally desirable. All correlations are significant at the $<.001$ level. We rank order items from greatest to least impact on the two variables.

Challenges. Fewer challenges was associated with better Emotional Regulation ($r = -.33$), greater Life Satisfaction ($r = -.33$), higher Friendship Quality ($r = -.29$), greater Wisdom ($r = -.26$), more Prosocial Behavior ($r = -.25$), greater Integrity ($r = -.23$), being more Decisive ($r = -.22$), higher Spirituality ($r = -.15$), better Social Advising ($r = -.13$), and more Self-Reflection ($r = -.10$). Tolerance was uncorrelated with Challenges.

Resolutions. Higher resolution scores were associated with greater Wisdom ($r = .43$), higher Life Satisfaction ($r = .39$), better Emotional Regulation ($r = .36$), more Prosocial Behavior ($r = .35$), greater Integrity ($r = .33$), higher Friendship Quality ($r = .33$), more Self-Reflection ($r = .31$), better Social Advising ($r = .30$), being more Decisive ($r = .29$), greater Spirituality ($r = .23$), and being more Tolerant ($r = .20$). Table 3 provides a summary of these data.

Table 3. Bivariate Correlations between the Eight Components of Wisdom and Primary Dependent Variables

Variable	Life Satisfaction			Friendships Quality			# of troubles			Resolution of troubles		
	r	Sig 1-t	N	r	Sig 1-t	N	r	Sig 1-t	N	r	Sig 1-t	N
Socadvise	.290	<.001	1640	.235	<.001	1640	-	<.001	1640	.304	<.001	1640
Decisive	.396	<.001	1641	.286	<.001	1641	-	<.001	1641	.289	<.001	1641
Prosocial	.301	<.001	1646	.274	<.001	1646	-	<.001	1646	.352	<.001	1646
Emregulate	.411	<.001	1646	.318	<.001	1646	-	<.001	1646	.362	<.001	1646
Tolerance	.139	<.001	1646	.131	<.001	1646	.003	.457	1646	.199	<.001	1646
Spirituality	.307	<.001	1646	.232	<.001	1646	-	<.001	1646	.232	<.001	1646
Reflection	.194	<.001	1646	.144	<.001	1646	-	<.001	1646	.309	<.001	1646
Integrity	.319	<.001	1646	.259	<.001	1646	-	<.001	1646	.331	<.001	1646

Confirmatory Factor Analyses

Confirmatory Factor Analysis was conducted using Muthen & Muthen Mplus, version 8.5. Two different analyses were conducted: one testing the 7-factor model, the model tested with the SD-WISE instrument, and an 8-factor model that included Integrity. In the context of wisdom components, we hope to attain a model in which the indicators load on to each of the latent variables uniquely. A second component of CFA is that indicators of one factor do not load onto other factors. As we will see shortly, the second component is an unrealistic demand. The whole concept of wisdom is that if an individual scores high on one of the wisdom components they are likely to score high on others—yielding a desirable intercorrelation. (Note: in the next paragraph Chi-square eliminates itself as a fit index due to inflation stemming from the very large sample size).

7- Factor Model. What we just suggested appears to be the case. The RMSEA was .054, the SRMR was .068. Not stellar but solid indication that all indicators loaded on to the correct factors with solid factor loadings:

- Social advising: Factor loadings = .57 - .77 (SD-WISE: .65 - .76)
- Decisiveness: Factor loadings = .60 - .78 (SD-WISE: .62 - .82)
- Pro-social behavior: Factor loadings = .49 - .79 (SD-WISE: .52 - .71)
- Tolerance: Factor loadings = .63 - .83 (SD-WISE: .57 - .75)
- Emotional regulation: Factor loadings = .49 - .83 (SD-WISE: .62 - .73)
- Spirituality: Factor loadings = .64 - .95 (SD-WISE: .68 - .91)
- Self Reflection: Factor loadings = .62 - .73 (SD-WISE: .62 - .81)

The fit indices associated with whether there are indicators that load on to other factors included CFI = .857, and TLI = .848. Typically values from .90 to .95 are considered excellent. Clearly, as expected, we fell well short of that mark, not a disaster, but still short. A closer look revealed five problematic indicators: ProSoc1, ProSoc6, EmReg7, EmReg8, and Tolrnt3. Examination of the first four found excellent face validity and solid factor loadings on the latent constructs. Tolrnt3 was simply a bad question to measure Tolerance ("I generally learn something from the people I meet."). To check for incremental improvement on the CFI and TLI scores by deletion of these four variables made no theoretical sense (they were good questions), but we deleted Tolrnt3 when creating the 8-factor model. It is to be expected that there is some intercorrelation between indicators when the premise of the study is that latent variables that measure wisdom are related constructs.

8- Factor Model. We used the same Mplus program to analyze the 8-factor model. We deleted the Tolrnt3 measure and included the eight indicators of Integrity. The fit indices were quite similar to the 7-factor model: RMSEA = .054, SRMR = .068, CFI = .839, TLI = .830. And, once again we have a model in which indicators load uniquely onto the latent variables but there are problems with intercorrelations between some indicators.

First, the Integrity variable fit in well with the seven other constructs. When internal consistency (alpha) was measured for each of the eight wisdom components,

Integrity had the highest Corrected Item Total Correlation with the sum of the other seven (.752). The seven other correlations ranged from .35 to .73. This finding suggests the Integrity fits comfortable with the original seven. For a closer look, we reproduce (below) not only the factor loadings but the question that measured each of the indicators:

- INTEGRITY1 = .725 Values by which I live my life are clearly established
- INTEGRITY2 = .662 If I promise to do something I do it
- INTEGRITY3 = .428 [scrupulous honesty] I strive to let my yes be yes and my no be no.
- INTEGRITY4 = .529 [scrupulous honesty] Quit job rather than violate my principles
- INTEGRITY5 = .600 (R) I bend the truth from time to time
- INTEGRITY6 = .660 I am honest and transparent when I am wrong
- INTEGRITY7 = .666 If I have hurt someone, I make all efforts to make restitution
- INTEGRITY8 = .449 (R) [scrupulous honesty] I tell white lies to protect others' feelings

These factor loadings and exploratory factor analysis using the SPSS basic factor procedure converged to create an interesting dynamic. Notice that for the three lowest factor loadings (#3, #4, #8), in brackets we have the phrase “scrupulous honesty”. This model suggest that all eight questions are good measures of Integrity but that two different components are revealed: scrupulous honesty (#3, #4, #8) and acting consistent with one’s values (the other five). We further found that those five questions correlate highly with Pro-Social Behavior.

In short, integrity fits well with the seven other latent variables, has solid factor loadings for all eight of the indicators, and divides itself into two sub-components: scrupulous honesty and living consistent with values.

The Impact of Family Patterns during Childhood on Wisdom-Related Variables

Three types of analyses were performed with the childhood family patterns: (a) a series of bivariate correlations that indicate the relationship between the 13 primary variables in the study (Life Satisfaction, Wisdom, Healthy Friction, Social Advising, Prosocial Behavior and other components of wisdom) and each of the 43 family patterns. (b) Regressions that identify the amount of variance explained by childhood family patterns (R^2) on each of the 13 primary variables, and (c) The family patterns that had the greatest impact on the 13 primary variables.

Bivariate correlations. We do not discuss here the 559 correlations between the 13 primary variables and the 43 family patterns. However, these correlations are presented in their entirety in Supplemental Material.

Amount of variance explained in each of the 13 primary variables by childhood family patterns. These are the criteria used to determine which variables were used as predictors in each of the 13 regressions. Due to the large data set, a correlation as small as .06 was often significant at the .001 level. Hence, the variables in the “Enter” regression procedure required an r -value of .10 or larger to be included as predictors. To streamline the presentation below we indicate only the R^2 value. **Table 4** provides more complete output.

Variance explained by childhood family patterns in 13 primary variables.

Life Satisfaction had the greatest amount of variance explained based on the designated subset of the family patterns ($R^2 = .32$). This was followed by Spirituality ($R^2 = .27$), Friendship Quality ($R^2 = .27$), Wisdom ($R^2 = .18$), Prosocial Behavior ($R^2 = .18$), Challenges experienced ($R^2 = .18$), Decisiveness ($R^2 = .13$), Integrity ($R^2 = .12$), Emotional Regulation ($R^2 = .11$), Resolutions ($R^2 = .10$), Social Advising ($R^2 = .06$), Self Reflection ($R^2 = .05$), and Tolerance ($R^2 = .04$).

Table 4. Summary information about the 13 regression analyses

Criterion variable	R	R^2	Std. Error	df1	df2	Sig. F D	# sig predictors
Life satisfaction	.563 ^a	.317	.715	37	1382	<.001	10

Spirituality	.521	.272	1.106	22	1406	<.001	6
Friendship quality	.520	.270	.866	28	1395	<.001	10
Wisdom	.427	.183	.569	43	1369	<.001	9
Pro-social behavior	.428	.183	.712	23	1506	<.001	12
Challenges/troubles	.420	.176	.864	20	1409	<.001	9
Decisiveness	.362	.131	.897	14	1604	<.001	6
Integrity	.341	.116	.703	17	1603	<.001	7
Emotional regulation	.323	.105	.926	20	1469	<.001	5
Resolutions	.310	.096	.802	25	1403	<.001	5
Social advising	.253	.064	.818	15	1606	<.001	5
Self reflection	.228	.052	.827	9	1626	<.001	4
Tolerance	.194	.038	.876	6	1635	<.001	2

The impact of specific family patterns. Included here are significant regression beta weights of the influence of childhood family patterns on each of the 13 primary variables. The impact of various family patterns showed great variation on their influence on the primary variables. We list the family patterns that had the greatest impact and indicate the beta weight for each significant relationship. Alpha was set at .05 to determine significance. As mentioned above, **Table 4** includes additional formula specifications from which these results emerged.

Playing outdoors. Playing outdoors as a child had a greater impact on primary variables than any other childhood family pattern. Playing outdoors had a positive impact on Life Satisfaction ($b = .12$), Quality of Friendships ($b = .10$), Wisdom ($b = .09$), Prosocial Behavior ($b = .10$), Decisiveness ($b = .07$), Integrity ($b = .09$), Emotional Regulation ($b = .06$), Resolutions ($b = .11$), quality of Social Advising ($b = .12$), and Self Reflection ($b = .07$).

Emotional health of the family. The emotional health of the family when the child was growing up was next on the chart. The Emotional health of the family had a positive impact on Life Satisfaction ($b = .13$), Friendship Quality ($b = .13$), experiencing

fewer Challenges ($b = -.20$), being more Decisive ($b = .06$), having better Emotional Regulation ($b = .13$). Unexpectedly, emotional health of the family was associated with *less* Prosocial Behavior ($b = -.08$).

Smoking. A family pattern that included smoking (or vaping) had a negative impact on Wisdom ($b = -.06$), Prosocial Behavior ($b = -.08$), Integrity ($b = -.05$), Resolutions ($b = -.06$), Self Reflection ($b = -.11$), and a greater number of Challenges ($b = .10$).

Parent-child relationship. A good quality parent-child relationship during the first 18 years of life had a positive impact on Life Satisfaction ($b = .09$), Spirituality ($b = .09$), Friendship Quality ($b = .11$), Integrity ($b = .07$), Resolutions ($b = .15$), and fewer Challenges ($b = -.15$). Notice the final two items are the components of Healthy Friction. A healthy parent-child relationship had the greatest impact on both the number of Challenges (lowest) and ability to resolve them (2nd to highest).

Electronic devices—play. Greater use of electronic devices for playing had a negative impact on Spirituality ($b = -.19$), Wisdom ($b = -.16$), Pro-Social behavior ($b = -.10$), Decisiveness ($b = -.20$), and Integrity ($b = -.14$). The use of electronic devices for playing had a greater average magnitude of impact (all negative) than any other childhood pattern. Notice the contrast with the other “play” variable; playing outdoors—displaying a uniformly positive impact across ten variables.

Overall physical health of the family. The overall health of the family during the first 18 years of participants’ lives had a positive impact on Life Satisfaction ($b = .10$), Wisdom ($b = .10$), Prosocial Behavior ($b = .07$), fewer Challenges ($b = -.12$), and higher Resolutions ($b = .13$).

Use of prescription drugs. The use of prescription drugs in the home during the child’s growing up years had a negative impact on the number of Challenges experienced (more) ($b = .09$), Decisiveness ($b = -.08$), Emotional Regulation ($b = -.07$), and Social Advising ($b = -.08$).

Sharing holidays together as a family. Sharing holidays together during childhood had a positive impact on Wisdom ($b = .09$), Pro-Social behavior ($b = .09$), Integrity ($b = .08$), and Social Advising ($b = .11$).

Involvement with music or art. Childhood involvement with music or art had a positive impact on Wisdom ($b = .08$), Social Advising ($b = .07$), Self-Reflection ($b = .07$), and Tolerance ($b = .12$).

Involvement with enjoyed hobbies. Childhood involvement with enjoyed hobbies had a positive impact on Life Satisfaction ($b = .07$), Wisdom ($b = .08$), Pro-Social behavior ($b = .08$), and Tolerance ($b = .07$).

Discussion

We address issues in this discussion in the following order. (a) a large diverse sample, (b) comparisons with the San Diego studies, (c) the impact of demographics, (d) discussion of wisdom indicators, (e) the impact of the Healthy Friction variable, (f) The impact of key predictors on Life Satisfaction and Friendship Quality, (g) the impact of childhood family patterns on wisdom-related variables, and (h) limitation, applications, and avenues for future research.

To increase clarity concerning which groups of variables are being considered, the eight components of wisdom itself (Self Reflection, Integrity, Decisiveness, Emotional Regulation, Prosocial Behavior, Social Advising, Spirituality, Tolerance) will be referred to as “**wisdom components**”. The mean of the eight wisdom components is called “**Wisdom**”. The 69 questions that measure each of the wisdom components will be called “**wisdom indicators**”. If five additional variables (Life Satisfaction, Friendship Quality, Wisdom, Challenges, Resolutions) are added to the wisdom components, these will be referred to as “**primary variables**”.

The sample. The sample was large ($N = 3292$, 1646 participant-informant pairs) and diverse (participants from 43 US states, eight foreign countries, and representing every major world religion). The difference of this sample (compared to the San Diego

samples) is that 59% of participants were university students and 72% of participants were female. Nevertheless, the age variable (range 18 – 78) proved to be psychometrically sound and correlations with age and gender were similar to the San Diego studies. The dyadic approach (with the participant-informant pairs) increased the objectivity of responses.

Comparisons with the San Diego Studies. Where comparisons were possible, the San Diego studies' results were largely duplicated. The first topic addressed, the number of and internal consistency of the *wisdom indicators*, notes both similarities and differences between the two studies.

Wisdom indicators. The present wisdom scale included eight wisdom components (adding integrity); the San Diego studies, seven. The internal consistency (Coefficient Alpha) of the indicators of each of the seven San Diego wisdom components paralleled internal consistency of the measures from the present study. Our study, however, included seven or more indicators for each of the wisdom components (except for Tolerance with five); the San Diego studies used four. The inclusion of additional indicators did increase measures of internal consistency. The alpha values for wisdom indicators of the San Diego study ranged from .72 to .86. With the additional indicators (the present study) internal consistency ranged from .84 to .93. Across all seven wisdom components, the average alpha for the San Diego studies was .80; the average alpha for the present study was .87. It should be noted that the .80 value was using the San Diego wisdom indicators with our data sets, not values from the San Diego data sets. Results suggest the desirability for a greater number of questions to measure each component of wisdom. The current changes are a start, but future studies will work toward even more internally consistent measures of each construct.

Gender and age. Other findings confirmed in the present study were the impact of gender and age. In the Jeste, Thomas and colleagues (2021) article, that introduced

Spirituality to the model, they found women more spiritual than men. The present study confirmed that. The age variable, despite the difference of composition of the samples, produced similar results. Those who were older were found to score higher on Wisdom and several of the wisdom components including Decisiveness, Emotional Regulation, Spirituality and Prosocial Behaviors.

Confirmatory factor analysis. The confirmatory factor analysis produced similar results. Confirmatory factor analysis sorted questions quite uniformly into the seven categories used in the SD-WISE scale. The only variable that was problematic was Integrity—a variable that was unique to the present study. The factor loadings reported in the Thomas and colleagues (2019) article had a similar range of values to the present study. The second level of the latent model structure included Wisdom as a latent variable that predicted the seven wisdom components that were measured by the 28 indicators. Our model had eight wisdom components, but for the seven that occurred in both studies, factor loadings all fell within an acceptable range of variation. Hence, the present study verified and supported all of the SD-WISE scale results where direct comparisons were possible.

Demographics.

Gender. The gender differences revealed that women are better at Social Advising, Self Reflection, Integrity, Spirituality, and Prosocial Behavior. Men were higher on emotional regulation. Many studies and gender stereotypes support these findings (e.g., George, Carol, et al. 1996; George, Anderson, et al., 2023; George, Lewis, et al., 2023; George, Saugh, et al., 2023).

Education. Education proved to have a robust influence in this domain. Education was positively correlated with all 13 primary variables (a desirable negative for Challenges), and were quite robust for several of them, including Decisiveness, Emotional Regulation, Wisdom, Integrity, Life Satisfaction and Social Advising. The eight wisdom components (all of which are teachable and learnable) are rarely taught in

school. Perhaps schools need to consider including the teaching of wisdom in their curricula.

Religious preference. Religious preference resulted in a single overwhelming outcome: Protestants and Catholics rank higher than Atheists and Agnostics across all 13 primary variables. This also suggests the centrality of Spirituality as a primary pillar of Wisdom. The effect was not modest with most F-values higher than 10 and peaking with an $F = 259$. Thus, this study joins others documenting the benefit of a faith-based foundation for living life. Since wisdom is traditionally grounded in Spirituality, this result should not be surprising.

Discussion of Wisdom Indicators

Overall, the eight wisdom indicators displayed excellent internal consistency and were significantly and positively correlated with both Life Satisfaction and Friendship Quality. The composite of these indicators, Wisdom, displayed the highest correlation with Life Satisfaction and Friendship Quality. Further, correlation values were greater for Wisdom than for any of the wisdom indicators. In regressions, 26% of the variance of life satisfaction was explained by six of the eight wisdom indicators (Tolerance and Integrity didn't make the cut), and 16% of the variance in Friendship Quality was predicted by five of the eight Wisdom indicators (Tolerance, Integrity, and Social Advising were not significant predictors). Emotional Regulation was the greatest predictor of Life Satisfaction and Friendship Quality in both correlational and regression analyses. There is no doubt that Wisdom as a composite and the wisdom indicators have a major impact on the primary outcome variables, Life Satisfaction and Friendship Quality. This also supports the argument that the composite variable (Wisdom) operates more robustly as a composite than the individual components of Wisdom.

The addition of Integrity. The inclusion of an additional wisdom indicator does not necessarily require that this indicator is highly correlated with the other seven indicators. For instance, Spirituality, a component added by the San Diego team, does

not correlate particularly well with other wisdom indicators (the CITC value of .348 was lower than any of the other seven indicators). But Spirituality is so intrinsic to wisdom as conceived by the ancients that one is loathe to discard it. By contrast, Integrity showed intercorrelations with the other indicators higher than any of the other seven (CITC = .752). Hence Integrity is a quality that fits nicely with other indicators. Integrity has a consistently high set of correlations with all other primary variables with correlation values ranging from -.23 (fewer Challenges) to .73 (Prosocial Behavior). Finally, the inclusion of Integrity as a primary component of Wisdom is congruent with almost all ancient conceptualizations.

Challenges with the tolerance variable. The effect of Tolerance proved to be problematic. Only five questions were included as indicators in the final measure. Three of the original eight indicators were deleted due to challenges with internal consistency. Only two (of 43) family-patterns predicted Tolerance in regression equations and explained only 3.8% of the total variance. Further, Tolerance was the lowest of the eight wisdom components in its association with Life Satisfaction ($r = .14$) and Friendship Quality ($r = .13$). These two values dropped to betas of .04 and .02 in regression analyses, not close to significant.

The primary difficulty appears to be the way “Tolerance” was operationalized. For instance, a dictionary definition of tolerance is “allowing the existence, occurrence, or practice of something that one dislikes or disagrees with without interference.” Another definition from the Stanford Encyclopaedia of Philosophy (2003) states, “[tolerance is] conditional acceptance of or non-interference with beliefs, actions or practices that one considers to be wrong but still “tolerable”, such that they should not be prohibited or constrained.” It turns out that questions used in both studies did not reflect well either definition. The questions reflect more of a “learning from other cultures” or “cultural curiosity” than tolerance—the ability to handle uncomfortable differences with others.

For instance, one of the indicators asks about “enjoyment”, a concept foreign to the concept of tolerance or acceptance of uncomfortable differences.

Because Tolerance, as operationalized here, does not reflect well the central components of tolerance, it is pointless to explore in any depth predictor or outcomes of the variable. With its current tilt toward “cultural curiosity and interest” we find a modest relationship with Life Satisfaction and Friendship Quality. Undoubtedly, actual tolerance is unrelated to friendship formation as studies from ancient to modern reveal that friendship is based on similarity of perspective or interests (e.g., Mehlman, 1962; Duck & Craig, 1978; Lea & Duck, 1982; Kudo & Simpkin, 2003; Solomon & Knafo, 2007). It is also open to question whether tolerant people have greater life satisfaction. Further, some of the names most closely associated with wisdom did not seem particularly tolerant: Jesus and the Pharisees; Socrates and his detractors, Moses and the rebellious Israelites, Aquinas and the infidels.

Healthy Friction.

This variable, rarely (never?) used in past research proved to be a major player. The way we crafted the variable with two segments of Challenges (number of problems across the life span in four areas of life experience) and Resolutions (ability to beneficially resolve these problems across the same four areas) provided interesting contrasts. Only the **Resolutions** variables is actually a measure of Healthy Friction. As you recall Karen Horney noted that Healthy Friction is unrelated to the number of problems but is related to the ability to resolve them effectively. The two variables, however, were negatively correlated ($r = -.41$) suggesting that the more problems you encounter the less your ability to resolve them effectively.

The Challenges variable was negatively correlated with all 12 wisdom-related variables except for Tolerance. Perhaps a lot of troubles makes one more compassionate and accepting of people with alternative perspectives. However, Resolutions created a higher set of correlations between Resolutions and the 12

primary variables than any other variable. All correlations were significant at $p < .001$ with a lowest correlation occurring for Tolerance ($r = .20$). The effectiveness of this variable suggests the validity of Karen Horney's contention: "The more we face our own conflicts and seek out our own solutions, the more inner freedom and strength we will gain." (Horney, 1942). It certainly needs to be taught as a serious life-success mechanism. In fact, it seems that Horney has gone one better than Kobasa's concept of hardiness. Hardiness represents a positive attitude toward challenges; Healthy Friction encompasses a track record of successful solutions. The robust and positive impact of Healthy Friction speaks for itself.

The Impact of Key Predictors on Life Satisfaction and Friendship Quality

In this study there is a greater emphasis on whether Wisdom or any of the wisdom components predict Life Satisfaction or Friendship Quality. In both settings, the composite variable, Wisdom, is the greatest predictor of Life Satisfaction ($r = .44$) and Friendship Quality ($r = .35$). In correlational analyses, all primary variables predict Life Satisfaction and Friendship Quality at a $p < .001$ level.

Excluding the composite Wisdom variable, correlations with Life Satisfaction for the components of wisdom range from .41 (Emotional Regulations) to .14 (Tolerance). In regression analysis with Life Satisfaction as the Criterion variable, primary variables (excluding Wisdom due to linear dependency) explain 31% of the variance with primary predictors (in order of beta weights) of Resolving Problems, Spirituality, Decisiveness, Emotional Regulation and fewer Challenges.

A similar pattern for Friendship Quality finds correlation values ranging from .33 (Resolutions of problems) to .13 (Tolerance). In regression analysis, primary variables (excluding Wisdom) explain 20% of the variance with the primary predictors (in order of beta weights) of Resolving Problems, fewer Challenges, higher Spirituality, Emotional Regulation and Pro-Social Behavior.

The overwhelming takeaway is that Wisdom and its component parts have a substantial influence on both Life Satisfaction and Friendship Quality. It is also clear that the composite variable Wisdom has a greater impact on both Life Satisfaction and Friendship Quality than any of the other primary variables. This suggests that the challenge of operationalizing Wisdom (does the single variable do better than the sum of the composites) finds general support in this study.

The Impact of Family Patterns during Childhood on Wisdom-Related Variables

The chart of correlations between 43 family patterns/characteristic and the 12 primary variables used in analyses has generated great interest by academics and laymen alike. Of the 43, 30 of them have a generally positive overall effect (based on the average correlation of each quality), the other 13 have an overall negative effect.

The state of being factors. There are two types of family interactions: Nine of them are state-of-being factors. These are less applicable than the 34 activity variables. The 34 represent things one can do. The nine only identify characteristic of upbringing that may have an effect. For all 12 of the primary variables, the four greatest predictors fall into the state-of-being category: Emotional Health of the Family, Quality of the Parent-Child Relationship, Discipline Perceived as Effective, and the overall Physical Health of Family Members. Four of the other state-of-being factors also scored in the top 13: Effective Conflict Resolution, Quality of Diet, Quality of the parent-parent relationship, and Quality of the sibling-to-sibling relationship. The ninth quality, Conflict in the Home, proved to be quite destructive, ranking #42 of 43. Although these do not represent specific activities, it urges parents to incorporate the positive qualities into their family patterns.

The activity variables—the enhancers. The activity variables are more satisfying as they represent things one can “do” to create a more successful adult. The top ranked item of all activity variables was unexpected: *Children playing outdoors*. This was one of the variables that was significantly and positively correlated with all other

variables. It turns out that there is strong literature support in the education journals for the benefits of playing and studying outdoors (e.g., Nedovic & Morrissey, 2013; Fiennes et al., 2015; Braun & Dierkes, 2017; Blair, 2009; Harris & Bilton, 2019). The next four activities that rank overall highest include *Praise and encouragement, having family meals together, celebrating holidays together, and active parental involvement in children's activities.*

The activity variables—the destroyers. One of two negative qualities that scored a near clean sweep was ***criticism in the home***. The only non-negative correlation was with tolerance which posted a modest benefit from criticism. Perhaps being criticized encourages greater tolerance toward others. Following a similar pattern was the ***use of prescription drugs***—Like Criticism, negatively correlated with all primary variables except Tolerance.

Other than criticism and use of prescription drugs three practices are products of our modern times: ***use of electronic devices—recreational; use of electronic devices—work*** and ***time in front of a screen*** (computer, TV, electronic device, cell phone). These big three were equal opportunity destroyers of (in order of magnitude) Decisiveness, Prosocial Behaviors, Spirituality, Integrity, Emotional Regulation, Social Advising, and experiencing more Challenges. This, once again, assists parents in identifying what types of activities that should be encouraged or discouraged in childhood.

Limitations, Implications, Applications, and directions for future research

Let's be frank. The study of wisdom in research is an imprecise business. The components of wisdom will always be open to question. The outcomes of wisdom are subject to many alternative interpretations. The causes of wisdom are equally problematic as, in regression analyses, childhood family patterns explain only 18% of the total variance in Wisdom. Include healthy friction into the equation (along with family

patterns) and 31% of wisdom is explained—with Resolutions explaining the lion’s share of the variance. That still leaves 69% unexplained.

But we fully embrace Jeste and Lee’s (2019) perspective that the study of wisdom is worth the effort. And as we continue to “explore, test, confirm, disprove, or revise specific hypotheses” that over time we will continue to “refine the conceptualization of wisdom”, helping us to better predict and teach this uniquely important life skill.

Major takeaways. (a) The inclusion of Integrity as highly correlated with other wisdom components lending support to its inclusion as a component of Wisdom; (b) the benefit of a greater number of indicators to measure each of the wisdom components; (c) the power of the Healthy Friction variable (particularly the Resolutions component) as a predictor and enhancer of Wisdom; (d) the capacity of family patterns to influence Wisdom and wisdom components, particularly the power of *parental encouragement* and *playing outdoors* to benefit and the power of *electronic devices*, *criticism* and *family conflict* to compromise; (e) the difficulties of the Tolerance variable and the desirability of a more precise operational definition and further assessment of its impact on relevant variables.

Finally, we urge the continued research of wisdom, the desire of ages: let us continue to make progress, despite challenges, on how we operationalize wisdom, understand its etiology, and continue to explore relevant outcomes.

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