

## Wisdom of Young Adults with High Functioning Autism in Canada and Pakistan: A Cross-cultural Study

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**Abstract:** This cross-cultural study investigates wisdom in people with high functioning autism (HFA). The diagnostic characteristics of autism are universal, as manifest in particular outward behaviours (DSM-4). One of the aims of this study is to explore how wisdom is understood in people with HFA. In a mixed methods study, interview questions asked participants how they understand wisdom; self-report measures of well-being (Life Satisfaction Scale) and wisdom (the 3D Wisdom Scale and the Adult Self-Transcendence Inventory) were also administered. Forty-six males participated from Karachi, Pakistan, and the Greater Toronto Area (GTA), Canada; the half diagnosed with high functioning autism were matched with nonautistics of equivalent age. Results showed that mean scores on the 3-D Wisdom Scale differed significantly between the HFA and nonautistic groups, but were equivalent for the two HFA groups. There were no differences between the two HFA groups on the scales of well-being. All groups were equally satisfied with their lives. Understanding of wisdom centered on the theme of cognition for both HFA groups. Both HFA groups considered family members to be the wisest among their acquaintances. However, the Pakistani HFA group mainly nominated religious figures as the wisest in history, whereas the Canadian HFA group primarily nominated scientists.

**Keywords:** Wisdom, autism, well-being, personal narratives.

## Introduction

### Wisdom

Although a hard term to define, wisdom typically refers to important truths about fundamental human experiences needed to achieve a good quality of life. Scientific studies of wisdom can be characterized as exploring either implicit or explicit theories of wisdom (Staudinger & Gluck, 2011). Ardelt (2003) developed the Three-Dimensional Wisdom Scale (3D-WS), a 39-item self-report questionnaire that identifies three distinct dimensions to be integrated if a person is to be considered wise: cognition, or truth-seeking; reflection, or perspective-taking; and affect, or compassionate concern for the well-being of others. The scale is now one of the most widely used to assess wisdom and shows good internal reliability and ecological validity, with wisdom nominees scoring significantly higher than non-nominees (Ardelt, 2003). Those individuals who are identified as wiser on the 3D-WS are also better able to cope with the vicissitudes of life (Ardelt (2005) and generally have greater life satisfaction (Owens, Menard, Plews-Ogan, Calhoun, &

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Ardelt, 2016). Similarly, Le and Levenson (2005) developed the Adult Self-Transcendence Inventory (ASTI) to assess the extent to which people experience personal meaning transcends their immediate lives; self-transcendence is understood as a personal developmental achievement necessary for wisdom. Recently, some studies have begun to ask people about their stories and experiences of personal wisdom (Ferrari, Kahn, Benayon, & Nero, 2011; Weststrate & Glück, 2017; Yang, 2014). The advantage of this method is that it provides accounts of wisdom that are deeply contextualized, with the presumption that there is a range of meanings of wisdom that can only be understood within their situated contexts, not as abstracted traits or qualities.

Studies have found that psychological well-being, including quality of life, greater life satisfaction and diminished feelings of alienation, are important fruits of personal wisdom (Ardelt, 1997, 2005; Owens et al., 2016). There are many ways to assess quality of life: Diener, Emmons, Larsen, and Griffin (1985) developed the satisfaction with life scale. From the opposite direction, Levenson, Jennings, Aldwin, and Shiraishi (2005) developed a scale for alienation as part of the ASTI; (Ferrari et al., 2011) found that levels of wisdom (assessed through the 3D-WS and ASTI) were positively correlated with Diener & Pavot's Satisfaction with Life Scale and negatively correlated with alienation.

## **Wisdom and Culture**

Studies also show that people from different cultural backgrounds have different implicit theories of wisdom (Takahashi & Bordia, 2000), and respond differently to explicit measures of wisdom like the 3D-WS Bang and Zhou (2014) or the ASTI (Lee, Choun, Alwin, & Levenson, 2015). In terms of explicit theories, Benedikovicová and Ardelt (2008) found that American students were higher in the cognitive and reflective dimensions of wisdom compared to Slovak students. They also found that the American students were lower in the affective dimension of wisdom than the Slovak students.

Age was a significant predictor of scores on the ASTI among undergraduates considered alone (Le & Levenson, 2005), as well as in a subsequent study comparing older Native-born Americans and Vietnamese immigrants to those in the USA Le (2008); this may reflect the smaller sample sizes per age group in Study 1, and effect sizes are not reported. Lee et al. (2015) found that the ASTI age and religion were significant predictors of ASTI scores of both Koreans and North Americans.

Kahn and Ferrari (2009) found Islamic figures were predominantly chosen as exemplifying wisdom historically in 50 participants in five different age groups in Pakistan. We discovered very little difference in how participants characterized the wisdom of their direct acquaintances, although men tended to attribute Islamic problem solving attributes to their wisest acquaintances. they also found that about half of the participants of both genders considered their wisest decisions to involve general problem solving, and this is increasingly true as people grow older especially for the wisest participants. In our own cross-cultural study (Ferrari et al., 2011) ANCOVA results showed that Jewish participants emphasized practical wisdom, while Muslim participants emphasized revealed wisdom.

## Wisdom and Well-being

Studies have found that psychological well-being, including quality of life, greater life satisfaction and diminished feelings of alienation, are important fruits of personal wisdom (Ardelt, 1997, 2005; Kahn & Ferrari, 2009). There are many ways to assess quality of life: Le and Levenson (2005) developed a scale for alienation; Diener et al. (1985) developed the satisfaction with life scale; and M. B. Frisch (1993); M. Frisch (1994) developed a comprehensive Quality of Life Inventory (QOLI) that included 16 sub-scales: health, self-esteem, goals and values, money, work, play, learning, creativity, helping, love, friends, children, relatives, home, neighbourhood, and community. Kahn and Ferrari (2009) also (Ferrari et al., 2011) found that levels of wisdom (assessed through the 3D-WS and ASTI) were positively correlated with (Pavot & Diener, 1993) Satisfaction with Life Scale and negatively correlated with alienation.

## Autism

Autism spectrum disorders can be understood from various perspectives, including those of psychologists, and clinicians, researchers, pediatricians, and theorists (Baron-Cohen, 2009; Frith, 2003; Tchaconas & Adesman, 2013). The clinical diagnosis of autism spectrum disorders includes difficulties in social, communication and behavioural domains of life (American Psychiatric Association, 2000, 2013). Asperger syndrome (AS) is one sub-category of autism spectrum disorders, considered synonymous with high functioning autism (HFA) for our study (American Psychiatric Association, 2000).<sup>1</sup> People with autism spectrum disorders have emotional difficulties (Attwood, 1997; Wing, 1981), and challenges in understanding others' mind (Baron-Cohen, 1997). However, despite these substantial limitations, many individuals with high functioning autism spectrum have demonstrated exceptional performance in many areas of endeavor Fitzgerald (2004), with many positive aspects to their personalities, such as, straightforwardness, honesty, perseverance, and a non-judgmental attitude that seem characteristic of them (McMullen, 2000). We can also learn from the autobiographies of people diagnosed with high functioning autism spectrum disorders about how they strive to live wisely e.g., (Lawson, 2000; Robinson, Howlin, & Russell, 2017).

## Autism and Wisdom

It seems possible that many people with high functioning autism (HFA) might be considered wise, since they have no significant delays in cognition or language (American Psychiatric Association, 2000). Following Ardelt (2003, 2000b) view of wisdom as a disposition that integrates cognitive, reflective, and affective dimensions, although people with Autism might, have challenges when it comes to the affective element of wisdom,

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<sup>1</sup>Despite some debate over the term Attwood, 2010 and (Attwood, 2010; Gillberg, 1998), in this thesis Asperger syndrome and high functioning autism are considered synonymous. The term high-functioning autism is not included in the DSM under the category of pervasive developmental disorder. However, most researchers use the term high functioning autism interchangeably with Asperger syndrome e.g., Colle, Baron-Cohen, Wheelwright, and van der Lely (2008); Tantam (1991); Wakabayashi et al. (2007).

they do not completely lack understanding of this dimension. Studies of wisdom e.g., (Ardelt, 2000a; Assmann, 1994) indicate that wise people are mature, satisfied in their lives, able to make decisions, and are able to deal with crises. In this way, wisdom helps to achieve a higher quality of life. These aspects of wisdom have been highlighted in some autobiographies e.g., (Williams, 1992, 2015; Lawson, 2000) of individuals with HFA. Furthermore, many individuals with high functioning autism have demonstrated ability in philosophy, politics, poetry, and in many other fields (Fitzgerald, 2004). Likewise, there is no reason to believe that people with HFA would be less inclined to self-transcendence, which Levenson et al. (2005) consider a hallmark of wisdom, than anyone in the general population.

## **Autism and Well-being**

The few studies have investigated the quality of Life of people with autism e.g., (Barneveld, Swaab, Fagel, van Engeland, & de Sonnevile, 2014; de Vries & Geurts, 2015; Egilson, Olafsdottir, Leosdottir, & Saemundsen, 2016) have found mixed results. Asperger (1979) reported that very few individuals with HFA with high intellectual abilities did well in life, and Tantam (1991) showed low levels of success in life in 46 Swedish individuals with HFA. In contrast, Kanner (1971) reported on the life outcomes of people with autism spectrum with whom he had worked earlier and found that most were very successful in later life. Vuletic (2010) also reported a generally good quality of life when she asked people with high functioning autism about their own impressions of their quality of life.

## **The Present Study**

This study uses a mixed method design. This cross-cultural study investigates the wisdom of people with high functioning autism by exploring their self-reported traits and life stories. The diagnostic characteristics for people with autism are universal (DSM-4), due to particular biological characteristics e.g., Sokol and Lahiri (2011), but little is known about how people with high functioning autism/Asperger syndrome understand wisdom, or whether wisdom is associated with a better quality of life in this population. Another major aim of this study is to see whether understanding of wisdom differs for people with HFA living in different countries.

## **Methods**

### **Recruitment of Participants**

To recruit people with HFA/AS various organizations serving people with HFA/AS were contacted both in Karachi, Pakistan and in the Greater Toronto Area (GTA), Canada. These organizations serve those who receive a diagnosis of ASD from a qualified professional. The organizations that were contacted in the GTA, Canada included Kerry's Place Autism Services, Geneva Centre for Autism, The Redpath Centre for Social and Emotional

Development, and Autism Ontario. In addition to these organizations the accessibility department of the University of Toronto was also contacted. These organizations posted the investigator's short recruitment advertisement to their websites. A few organizations posted my recruitment advertisement on bulletin boards at some of their service centers and offices. External ethics approval was also needed from some organizations. However, the applications were successfully approved from some of the organizations. There were refusals from some organizations due to their commitments to other scholars; they could not accommodate this study. The organizations that were contacted in Karachi, Pakistan included: MaAyesha Memorial Centre; The Education Foundation; Institute of Behavioural Psychology; Department of Professional Psychology, Baheria University; Department of Special Education, University of Karachi; Department of Psychiatry, Aga Khan University Hospital; and Karachi Vocational and Training Centre for Children with Developmental Disabilities. External ethics approvals were also received from those organizations.

Participants who were willing to participate in study either contacted the investigator directly by phone or email, or they contacted a responsible person at one of the organizations mentioned above and then the organizations contacted the investigator. A few parents of participants from Pakistan and Canada also contacted the investigator to arrange for their son to participate in the study. In Pakistan, most interviews were conducted at the office of the Education Foundation (in a separate room), located at Mahmodabad, Karachi, Pakistan. Some interviews were also conducted at the MaAyesha Memorial Centre, located at Shahrah-e-Faisal, Karachi, Pakistan. In Canada, interviews were conducted in the investigator's office at the University of Toronto; at the Kerry's Place Autism Services, Brampton resource center; or at the Brampton and Mississauga Public libraries.

Typically developed people (non-autistic people from the general population) were recruited randomly from the public libraries and also from university libraries in Canada and Pakistan. In Pakistan typically developed people were interviewed mostly at the office of The Education Foundation and at the MaAyesha Memorial Centre. In Canada they were interviewed mostly in the investigator's office at the University of Toronto and in a separate room (small reading room) at the Mississauga Central Public Library.

## **Participants**

Forty-six male participants ages 18 to 33 years took part in this study. Of these 46 participants, half had been diagnosed with Asperger syndrome/high functioning autism by a qualified professional; the other half were typically developed people from the general population (non autistic). Participants with HFA ( $M = 24.39$ ,  $SD = 5.00$ ) were age matched with non autistic participants ( $M = 22.95$ ,  $SD = 4.26$ )<sup>2</sup>. Twenty-four were recruited from Karachi, Pakistan, and 22 were recruited from the GTA. An independent-sample t test indicated that the mean age of people with high functioning autism ( $M = 24.39$ ,  $SD = 5.00$ )

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<sup>2</sup>Most participants were between 18-30 years old. However, 1 participant from the Pakistani high functioning autistic group was 32 years old, 2 participants from the Canadian high functioning autistic group were 31 and 33 years old, and 1 participant from the Canadian control group was 31 years old.

did not differ from the mean age of those non autistics ( $M = 22.95$ ,  $SD = 4.26$ ),  $t(42.92) = 1.046$ ,  $p = .30$ , two-tailed.

## **Procedure**

Interviews were conducted in the participants' native language (Urdu in Pakistan, and English in Canada). Participants met with the interviewer for one session lasting from 45 to 90 minutes and included both open-ended interviews and self-report questionnaires<sup>3</sup>. Participants were asked a set of broad questions adapted from a study by (Ferrari et al., 2011) about their own definition of wisdom and about personally-known and historical exemplars of wisdom. Verbal assent was given before beginning the interviews, which were audio-taped and transcribed verbatim. (Interviews of Pakistani participants were first transcribed verbatim in Urdu, and then translated into English.)

## **Measures**

### **Wisdom**

We used 2 wisdom measures: (1) Ardel (2003) Three-Dimensional Wisdom Scale (3D-WS) and (2) Levenson et al. (2005) Adult Self-Transcendence Inventory (ASTI). The Three-Dimensional Wisdom Scale has 39 items (e.g., I always try to look at all sides of a problem) that included 14 items for cognitive, 12 for reflective, and 13 for affection dimensions of wisdom. The ASTI has a total of 18 items and includes two scales, 14 items for self-transcendence (e.g., I feel that my individual life is a part of a greater whole) and 4 items for alienation (e.g., I feel isolated and lonely). For both instruments, participants' responses were recorded on a 5-point Likert scale.

### **Psychological Well-being**

We used 2 measures to assess well-being: (1) Satisfaction with Life Scale Pavot and Diener (1993), which includes 5 items that assess global life satisfaction (e.g., the conditions of my life are excellent). Participants responded on a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree); (2) The alienation dimension of the ASTI: For the purposes of this study, alienation was considered an aspect of well-being (reverse scored). Participants were also asked to complete a demographic questionnaire.

## **Interview Coding Scheme**

Following Ardel (2003) we explored themes of wisdom as the integration of cognitive, affective, and reflective qualities and coded specifically for these themes in the interviews. We also added two additional aspects of wisdom: self-transcendence (based on

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<sup>3</sup>All interview questions were translated into Urdu and translated back into English. However, because English is the second official language in Pakistan and most schools, colleges, and universities have adopted English as their language of instruction, Pakistani participants had no difficulty reading and understanding English questionnaires.

the work of [Levenson et al. \(2005\)](#) and teaching and advice (an important theme that emerged from the interviews themselves). All transcripts were coded by the first author. A second coder scored 20% of the transcripts, selected at random. Interrater reliabilities for wisdom themes were as follows: cognitive (89%), affective (93%), reflective (82%), self-transcendence (87%), and teaching and advice (91%). All disagreements were resolved by a discussion between the raters. For this paper, only participants' definition of wisdom is presented.

## Results

An independent-sample *t* test indicated that years of education and marital status did not differ between participants.

### Cross-cultural and Internal Reliability of Measures

**Table 1**  
Internal Reliability

Scales	No. of items	Cronbach's Alpha				
		Overall	HFA Pakistan	Nonautistic Pakistan	HFA Canada	Nonautistic Canada
Three Dimensional Wisdom Scale	39	0.89	0.82	0.83	0.89	0.93
Cognitive dimension	14	0.80	0.71	0.74	0.88	0.86
Reflective dimension	12	0.85	0.71	0.70	0.79	0.88
Affective dimension	13	0.77	0.67	0.77	0.66	0.82
Self-transcendence	14	0.77	0.79	0.78	0.69	0.81
Psychological Well-being						
Satisfaction with life	5	0.86	0.77	0.74	0.76	0.95
Alienation	4	0.86	0.70	0.69	0.80	0.83

As shown in Table 1, the internal reliability for self-transcendence scale was .77. The 3D-WS has an even higher overall high internal reliability ( $\alpha = .89$ ). Noticeably, the internal reliability for the affective dimension of the 3D-WS for people with HFA ( $\alpha = .67$  and  $.66$  respectively for Pakistan and Canada) in both countries remained low compared to the typically developed population ( $\alpha = .77$  and  $.82$  respectively for Pakistan and Canada). As might be expected from their clinical diagnosis, the responses of participants with HFA on the affective dimension of the questionnaire are inconsistent, resulting in a lower internal reliability.

The psychological well-being scales (satisfaction with life and alienation reverse scored) also had good overall internal reliabilities,  $\alpha = .86$ , for both well-being scales.

## Wisdom Traits

### Does Wisdom Differ in Individuals with HFA Living in Pakistan and Canada?

Table 2 shows the mean scores and standard deviations of the 3D-WS, the components of the 3D-WS, and Self-transcendence. The results of a two-way ANOVA showed that there were no differences between the two HFA groups on the 3D-WS; however, the mean scores of the HFA groups were significantly lower than those of the non autistic groups,  $F(1, 42) = 8.906, p = .005$ . There was no interaction between the HFA and non autistic groups or between the two countries.

**Table 2**

Mean scores and standard deviations for the 3D-WS, components of 3D-WS, and self-transcendence scales by country and groups.

Scales	OVERALL Pakistan (n = 24)	OVERALL Canada (n = 22)	OVERALL HFA (n = 23)	OVERALL Nonautistic (n = 23)	PAKISTAN HFA (n = 12)	PAKISTAN Nonautistic (n = 12)	CANADA HFA (n = 11)	CANADA Nonautistic (n = 11)
3D-WS	3.01 (0.46)	3.34 (0.56)	2.96 (0.44)	3.38 (0.53)	2.81 (0.40)	3.21 (0.44)	3.12 (0.45)	3.56 (.059)
Cognitive	3.14 (0.65)	3.46 (0.70)	3.34 (0.64)	3.25 (0.74)	3.33 (0.64)	2.95 (0.62)	3.35 (0.67)	3.57 (0.74)
Reflective	3.15 (0.60)	3.50 (0.73)	2.94 (0.52)	3.96 (0.63)	2.81 (0.52)	3.49 (0.49)	3.08 (0.50)	3.91 (0.71)
Affective	2.75 (0.68)	3.06 (0.57)	2.60 (0.52)	3.20 (0.62)	2.30 (0.35)	3.20 (0.64)	2.93 (0.50)	3.20 (0.62)
Self-transcendence	3.35 (0.57)	3.74 (0.45)	3.45 (0.48)	3.63 (0.60)	3.27 (0.50)	3.42 (0.66)	3.63 (0.41)	3.85 (0.47)

Considering each of the 3DWS scale dimensions independently, a two-way ANOVA showed that neither of the HFA groups differed on their profile of the cognitive dimension of wisdom. There were also no differences between the high functioning autistic and non autistic groups on the cognitive dimension of wisdom, nor did country of origin significantly produce different results on the cognitive dimension of wisdom. Pakistani and Canadian high functioning autistic groups did not differ significantly on the reflective dimension of wisdom. However, overall the HFA groups scored significantly lower than non autistics,  $F(1, 42) = 20.703, p = .001$ . Moreover, both the HFA groups scored lower on the reflective dimension as compared to non autistics in their respective countries,  $F(1, 42) = 20.703, p = .001$ . For the Affective dimension Canadian HFA group had a higher tendency to endorse affect as compared to the Pakistani HFA group,  $F(1, 42) = 3.76, p = .06$ . However, both HFA groups scored significantly lower than non autistics on this dimension,  $F(1, 42) = 13.192, p = .001$ . Country of origin had no effect on the affective dimension of wisdom.

A two-way ANOVA showed no significant difference between the two HFA groups or between the HFA and non autistic groups on self-transcendence (ASTI). The results also revealed that there was no significant difference between the high functioning autistic and non autistic groups in their respective countries.



## Well-being

This study measured well-being as: (1) satisfaction with life Scale (SWLS) and (2) alienation (reverse scored). We again used a two-way ANOVA to see how these scales of well-being differ between the two countries and between the two groups. Table 3 shows the mean scores and standard deviations for SWLS and Alienation.

**Table 3**

Means and standard deviations of SWLS and alienation by country and groups.

Scale	OVERALL Pakistan	OVERALL Canada	OVERALL HFA	OVERALL Nonautistic	PAKISTAN HFA	PAKISTAN Nonautistic	CANADA HFA	CANADA Nonautistic
	(n = 24)	(n = 22)	(n = 23)	(n = 23)	(n = 12)	(n = 12)	(n = 11)	(n = 11)
SWLS	5.13 (0.64)	5.40 (1.01)	5.17 (0.66)	5.34 (0.99)	5.05 (0.65)	5.21 (0.64)	5.30 (0.68)	5.49 (1.29)
Alienation	2.50 (1.01)	2.43 (0.94)	3.10 (0.75)	1.82 (0.71)	3.31 (0.61)	1.68 (0.58)	2.88 (0.85)	1.97 (0.84)

The results found no difference between the two HFA groups on the satisfaction with life scale, nor did the mean scores of the HFA groups differ significantly from those of the non autistic groups. Likewise, there was no significant difference between the two HFA groups on alienation. However, both HFA groups scored significantly higher on alienation than did non autistics,  $F(1, 42) = 35.001$ ,  $p = .001$ . The mean scores on alienation were higher in both the HFA groups compared to non autistic groups in their country of origin,  $F(1, 22) = 44.087$ ,  $p = .000$  (for Pakistan), and  $F(1, 20) = 6.334$ ,  $p = .02$  (for Canada).

## Relationships between the Scales

Table 4 below shows that all correlations between the 3D-WS, ASTI and the well-being scales were statistically significant at a level equal to or greater to .05. As expected, only alienation had a strong negative correlation with the 3D-WS ( $r[44] = -.638$ ,  $p < .001$ ) and self-transcendence ( $r[44] = -.454$ ,  $p < .001$ ), whereas the rest of the correlations were positively correlated with the 3D-WS and self-transcendence. The 3D-WS was positively highly correlated with the ASTI,  $r(44) = .516$ ,  $p < .001$ .

**Table 4**

Correlations between the 3D-WS, ASTI, and well-being scales

	3D-WS	Self- transcendence	Life Satisfaction	Quality of life	Alienation
3D-WS	1	.516**	.716**	.607**	-.638**
Self-transcendence		1	.511**	.343*	-.454**
Life Satisfaction			1	.432**	-.452**
Alienation					1

\*\* . Correlation is significant at the 0.01 level (2-tailed)

## **Qualitative Analysis of Understanding Wisdom**

### **Exemplars of Wisdom**

Looking to the interview data, we first consider who people with high functioning autism consider exemplars of wisdom (both personally know and those from history), before considering their own wisest moments and their definitions of wisdom.

### **Historical Exemplars of Wisdom**

The study found five bases for the nominations of the wisest person in history: (1) religion, (2) science, (3) politics, (4) literature, and (5) human rights. Pakistani participants made 19 nominations for the wisest person in history (two non autistic participants and one high functioning autistic participant considered no one to be wise). A total of 16 out of 19 people from Pakistan (including both participants from the high functioning autistic and non autistic groups) named religious people as the wisest in history, but some nominated more than one person. By far the main nominee was the Prophet Muhammad (12 nominations) followed by Quaid-e-Azam (the founder of Pakistan, 3 nominations), Hazrat Umar (uncle of prophet Muhammad, 2 nominations), and 1 nomination each for Rais Amrohi (a writer), Dr. Abdul Qadeer (a Pakistani nuclear scientist), Newton, Obama, Jesus, Shri Raam (religious figure in Hindu religion), and Prince Amin Aga Khan (religious figure in Aga Khani religion). Canadian participants made a total of 20 nominations for the wisest person in history (2 participants from the Canadian HFA group did not consider any one to be wise). The Canadian nominations (including participants from the high functioning autistic and non autistic groups) were much more eclectic: Albert Einstein received 4 nominations, Jesus received 3 nominations, Newton received 2 nominations, and 1 nomination was given each for Steve Jobs, Alexander Graham Bell, Di Vinci, Prophet Muhammad, Pope John Paul 2nd, Miyamoto Musashi (a writer), Shakespeare, Gandhi, John F Kennedy, Martin Luther King, and Mother Theresa. Table 5 below shows the frequency of the nominations for the wisest people in history by participant group.

The study did not find any differences between high functioning autistic and non autistics for nominating the wisest person in history on the basis of religion, politics, human rights, or literature. However, the Canadian HFA group was significantly more likely to nominate a scientist as the wisest person in history compared to the Pakistani HFA group,  $\chi^2 (1, N = 23) = 5.789, p = .01$ . Results indicated a higher tendency for the Pakistani HFA group to nominate a religious person as the wisest in history compared to the Canadian HFA group,  $\chi^2 (1, N = 23) = 2.654, p < .10$ . Likewise, the Pakistani non autistic group was significantly higher in nominating a religious person as the wisest in history compared to the Canadian non autistic group,  $\chi^2 (1, N = 23) = 7.340, p < .007$ . On the other hand, the results of a Pearson Chi square test found that the Canadian HFA group significantly nominated a scientist as the wisest in history compare to the Pakistani HFA group,  $\chi^2 (1, N = 23) = 5.789, p < .01$ . However, we found no difference between the two non autistic groups for nominating a wisest person in history on the basis of science.

### Personally Known Exemplars of Wisdom

Pakistani participants nominated 24 people as a wise personal acquaintance (1 Pakistani HFA participant did not nominate anyone; 1 non autistic participant from Pakistan nominated 2 wise people). More specifically, 11 people nominated family members (i.e., father, mother, brother, and sister), 5 nominated extended family members (i.e. grandfather, grandmother, and uncle), 4 nominated friends, and 4 nominated non-family acquaintances (i.e., teachers and social workers). The Pakistani HFA group nominated 5 family members, 4 friends, and 2 extended family members (1 participant did not nominate any wise person).

Canadians nominated 20 people as the wisest personal acquaintances (2 from the Canadian HFA group did not nominate anyone). More specifically, 14 nominated family members, 3 nominated friends, 2 nominated non-family acquaintances, and 1 nominated an extended family member (i.e., grandfather). The Canadian HFA group nominated 5 family members, 2 friends, 1 extended family member, and 1 non-family acquaintance. Table 5 above shows the frequency of the wisest acquaintance by categories and groups.

**Table 5**  
The frequency of participants' expressions related to wisdom by group

Wisdom in life	Nonautistic Pakistan	Nonautistic Canada	HFA Pakistan	HFA Canada
Wisest person in history				
Religious figures	10	4	6	2
Scientist	1	4	1	5
Politician	1	0	2	1
Write	1	1	0	1
Human rights activist	0	2	0	1
The wisest acquaintances				
Family	6	9	5	5
Extended family	2	0	2	1
Friend	0	1	4	2
Non-family	4	1	0	1
Themes of personal wisdom				
Cognitive	7	6	7	5
Affective	4	5	1	4
Teaching and advice	2	2	4	2
Themes of definition of wisdom				
Cognitive	8	7	8	10
Affective	1	2	2	1
Reflective	0	2	0	0
Self-transcendence	3	0	0	0
Teaching and advice	0	0	2	0

No differences were found between the two HFA groups in nominating wisest acquaintances. However, a Pearson Chi square test found that the HFA groups nominated friends as their wisest acquaintance significantly more often than did non autistic participants,  $\chi^2 (1, N = 46) = 4.212, p = .04$ , whereas non autistic participants had a higher tendency to nominate a non-family member as their wisest acquaintance more often than those with HFA participant,  $\chi^2 (1, N = 46) = 3.067, p = .08$ . No differences were found between the HFA and non autistic groups for nominating members of the other categories of acquaintances. Likewise, there were no statistical differences between the two HFA

groups in nominating their wisest acquaintance. However, the Canadian HFA group was more expressive than the Pakistani HFA group, as we see in the following examples.

The wisest people in my life are my parents because I always look up to them ... They brought us up well and they guided me at every step in my life, because of them, I Insha Allah [if Allah wishes] will be a very successful man in our generation because of my parents. I owe it all to them (Interview 5, HFA Pakistan).

My grandfather is the wisest ... well, one, he has lived over a century; two, he has been married for 89 years; three, he has had great experiences at all times. His wife is 110 and he is 114. The man was a soldier for a living and at all points in his life when he had an experience he would share it with family, so that they could all grow and gain wisdom from his experiences; so that when he passes, his wisdom is not lost. He has invested in what he has known, learned, and shared it with the next generation bit by bit, rather than trying to pour it in at the last moment. I think this is wisdom because it's like investing 50 cents every week and so the investment grows gradually (Interview 29, HFA Canada).

## **Definition of Wisdom**

The study explored five themes related to defining wisdom, (1) cognitive, (2) reflective, (3) affective, (4) self-transcendent, and (5) teaching and advice. Surprisingly, all the groups defined wisdom as primarily cognitive.

Eight Pakistanis and ten Canadian with HFA defined wisdom cognitively, for example: 'I think wisdom is about knowledge and making the right decisions, for example how Einstein moved from Germany to America that was when he saved his life' (Interview 27, HFA Canada). Two Pakistani with HFA and one Canadian with HFA defined wisdom affectively, for example: 'Wisdom is to know everything and to use it for the betterment of everyone around you in a positive way' (Interview 3, HFA Pakistan). No one from the either HFA group defined wisdom reflectively; however, two non autistic Canadians defined wisdom in terms of reflection (e.g., 'I think wisdom is being able to live a life and be able to reflect on it and be able to fix your mistakes and teach other people from your experiences', Interview 38, non autistic Canada). Three non autistic Pakistanis defined wisdom in terms of self-transcendence, for example: 'Wisdom in my eyes is, for example, a person who through his words and actions takes other people towards the right path and changes his life to move towards a positive direction, then that is his wisdom.' (Interview 16, non autistic Pakistan). Finally, 2 HFA Pakistani defined wisdom in terms of teaching and advice, for example, 'Wisdom is one who gathers the required experiences then becomes old and therefore starts teaching' (Interview 1, HFA Pakistan).

## **Personal Wisdom**

Three themes characterize examples of personal wisdom: (1) cognitive, (2) affective, and (3) teaching and advice. There were no statistically significant differences between the two groups in the number of mentions of cognitive examples of personal wisdom. However, cognitive wisdom for the most Pakistani HFA group was related to dealing with personal and household situations, whereas, for most of the Canadian HFA group, their wisest

actions involved making wise decisions for their studies. For non autistic participants in both Canada and Pakistan, personal wisdom was related to their personal, financial, work, and educational matters. All participants understood personal wisdom primarily in terms of cognition. Table 5 above shows the frequency of participants' expressions related to their wisest action.

Seven participants in the Pakistani HFA group referred to cognition, for example, 'My approach was wise many times in my life. Many times I was involved with my elder brother in brain storming and making some life decisions.' (Interview 11, HFA Pakistan). Five participants from the Canadian HFA group referred to cognition in their account of personal wisdom, for example, 'I guess getting into my PhD [in Statistics] is a wise decision and it was time to do something different and that was wise.' (Interview 25, HFA Canada).

No significant statistical differences were found in how participants refer to affect in explaining personal wisdom. This is perhaps surprising. True, overall, the reference to affect is rare, but we do find examples of HFA's personal wisdom explained in terms of the Affective or interpersonal dimension: One Pakistani with HFA explained that 'I became a sports coach and I helped people learn from my experiences. So, working as a coach is my wisest approach as this helps people' (Interview 4, HFA Pakistan). Likewise, 4 participants in the Canadian HFA group explain their personal wisdom in terms of affect, saying for example:

'One time one of my friends was having a difficult time in his life he approached me to talk to me about what was happening in his life. We got together sat down we started talking about what was happening with him. Most of the things we talked about, I think I was able to help him out from the past experiences in my life, which helped me to be wise in some aspects, and he listened to me. For example, one time he came to me I was able to help because he was talking about a [romantic] crush that he had and I was able to help him out from guiding him through my own personal experiences with people that I had met in the past; it has helped both me and him' (Interview 34, HFA Canada).

We found no statistically significant group difference in terms of personal wisdom understood as teaching or giving advice. The study found two references for the personal wisdom in teaching and advice from the Canadian HFA group, for example: 'When my friend was being bullied he came to me for advice because he knew I had been bullied before, I told him how to cope with it, I told him how to avoid bullies and how not to let the bullies use action. That's a one of the times when I was wise.' (Interview 28, HFA Canada).

## **Discussion**

### **Wisdom Traits**

The implicit understandings of wisdom differ in various parts of the world. In general, Asians (Japan & Taiwan) tend to integrate cognitive, reflective, and affective dimensions of wisdom (Takahashi, 2000; Takahashi & Bordia, 2000) which are also reflected in the

North American conception (Ardelt, 2003, 2005). This study was oriented towards the cognitive, reflective, and affective elements of wisdom in people's personal traits and life stories. This study found that the two HFA groups did not differ in overall wisdom scores (assessed through the 3D-WS). However, they differed in the affective dimension of wisdom; the Pakistani Asperger group was substantially lower in the affective dimension of wisdom compared to the Canadian HFA group. We speculated structured social group training helps Canadians with HFA in understanding the affective elements of life. This is a resource that benefited Canadian people with HFA, whereas, the Pakistani HFA group relied more on unstructured social help from their collectivist society. This unstructured help, however, did not produce an increase in their affective dimension of wisdom.

## **Exemplars of Wisdom**

Naming ideal exemplars is one way to remember the attributes of the wise, and also a way to emulate their characteristics.

### **Historical Exemplars of Wisdom**

We found significant differences between the groups in who nominated as the wisest person in history. Pakistani non autistic and HFA groups frequently named a religious figure especially Muhammad as the wisest person in history, while Canadians (again, including HFA and non autistic groups) frequently named a scientist, reflecting the findings of previous Western studies (Holliday & Chandler, 1986; Assmann, 1994). This suggests that revealed or theological wisdom is predominant in Pakistan. By contrast, few people from Canada named religious figures in this study, half named a scientist as the wisest person in history, a finding also consistent with our previous cross-cultural research (Ferrari et al., 2011). In that study, Muslims living in Pakistan predominantly nominated historical religious leaders, while Jewish Canadians more often nominated activists or scientists as the wisest person in history. Self-transcendence was an important characteristic for nonautistic Pakistani nominations for the wisest person in history, but not for Pakistanis with HFA. Further analysis found that the between country difference on self-transcendence was mainly due to very high scores for nonautistic Pakistanis. Khan (2008) found that for most people in Pakistan the practice of Islam is integral to most aspects of their lives. This was also found by Ahmadi (1998), who studied self-transcendence through life narratives of Muslim Sufis living in Sweden. His participants reported that self-transcendent contemplation of God improved their quality of life. We also found that practicing Muslims not only incorporate contemplative self-transcendence into their lives, but identify this attribute in the wise people they idealize.

### **Acquaintances as Exemplars of Wisdom**

Although wise historical figures are influential ideals to emulate, people also look to acquaintances they admire for their wisdom. A few participants from both countries named friends and non-family members, but most Pakistani and Canadian participants (both the

HFA and non autistic groups) nominated a family member as the wisest among their acquaintances. Pakistani participants were slightly more likely to nominate extended family members. This suggested that both Canadians and Pakistanis valued family and gained a great deal of wisdom from their immediate and extended family.

People with HFA also mostly considered parents their wisest acquaintance, and nominated a mother or father based on their affective traits. Because people with HFA have difficulty understanding affect APA, [American Psychiatric Association \(2000, 2013\)](#), feeling their parents' affection towards them might be especially a source of wisdom, because they know that their parent cares for them. This is important because it validates the claim that autism spectrum is not a 'disorder of love' as in [Bettelheim \(1967\)](#)<sup>4</sup>. In fact, [Silverman \(2011\)](#) highlights the importance of maternal affection for people with autism, arguing that people with HFA feel love, but typically express their need for affection in ways that are others find difficult to understand.

Beyond immediate family members, we also found that HFA groups in both countries predominantly nominated a friend as their wisest acquaintance. Surprisingly, not a single friend was nominated by non autistic participants. Since people often value what they lack or find hard to achieve and take for granted what they have ([Tversky & Griffin, 1991](#)), perhaps non-autistics take their friends' wisdom for granted. In contrast, people with HFA in both countries treasured making and maintaining friendships, and considered their friends wise. From the autobiographies of people with HFA, we can see that making a friend is the hardest job for them ([Lawson, 2000](#)).

### **Teachers as Sources of Wisdom**

People in Pakistan hold teachers in high regard, believing that whatever knowledge they possess is a tribute to their teachers. Islamic preachers are also considered teachers, who instruct people on how to live a prosperous and sin-free life. This is why this theme emerged from Pakistani interviews, but not the Canadian ones.

### **Defining Wisdom**

Consistent with [Ardelt \(2003\)](#), we found cognitive, reflective, and affective dimensions of wisdom in people's conceptions of wisdom, along with the themes of self-transcendence and of teaching or advice. Most people in Canada and Pakistan (both the HFA and non autistic groups) defined wisdom as cognition. This finding is consistent with our previous research ([Kahn & Ferrari, 2009](#)) in which 50 Pakistanis from the general population defined wisdom in terms of problem solving and knowledge, themes we consider cognitive. Because people with HFA lack the social skills needed for sophisticated interpersonal interactions, they understand spiritual aspects of wisdom abstractly ([Goodson & Edwin, 2012](#)). This is not surprising, given the clinical nature of Asperger syndrome/HFA. This

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<sup>4</sup>In the nineteen sixties, the theory of 'refrigerator mother', developed by [Bettelheim \(1967\)](#) took hold as a way to explain autism spectrum traits. Refrigerator mother denotes those who have a heartless style of raising their child with little emotional attachment.

also connects back to HFA's nominations for the wisest person: most named scientists, famous for their cognitive skills.

## **Wisdom and Psychological Well-Being**

We explored two distinct ways to understand psychological well-being: (1) satisfaction with life and (2) alienation (reversed). People with HFA reported a lower quality of life and also felt more alienated than non-autistics. Temple Grandin once said 'Much of the time I feel like an anthropologist on Mars' ([Sacks, 1995](#)). However, a strong sense of psychological well-being also surfaced in their interviews, and we found that people with HFA were satisfied with their lives. In fact, there was no difference between HFA and non autistic participants satisfaction with life. Thus, people with HFA often accept their conditions and enjoy their lives, which is itself a mark of wisdom. One Pakistani individual with HFA even considered Asperger syndrome to represent the next step in human evolution, believing that someday the entire human species will become like people with Asperger syndrome.

## **Policy and Recommendations**

Wisdom matters because it is often associated with quality of life ([Owens et al., 2016](#)). And indeed we found that people with HFA scored lower on wisdom (assessed through the 3D-WS) and felt alienated compared to non autistics from Canada and Pakistan. We believe teaching wisdom to people with HFA will not only enhance their ability to deal with day-to-day matters, but should also increase their quality of life. Teaching for wisdom may help to overcome social limitations associated with autism, as wisdom is associated with greater social sensitivity, diminished alienation, and increased well-being ([Ferrari et al., 2011](#); [Owens et al., 2016](#)).

## **Limitations**

Our study was limited to investigating people with HFA in Canada and Pakistan living in urban cosmopolitan cities: the GTA in Canada and Karachi in Pakistan. Although the HFA group was matched with the non autistic group only by age, it may differ on other parameters such as IQ, adaptive behaviour skills, mental health, emotional intelligence, and family circumstances. This study was also limited to male participants and excluded female participants, since studies ([Constantino & Charman, 2012](#)) found autism is four times higher in male than female populations.

## **Conclusion**

Little is known about wisdom in special populations, such as those with high functioning autism. We hope that this study of wisdom of people with high functioning autism in Canada and Pakistan will raise new questions, challenge assumptions, and develop



new theoretical and empirical models to advance future research investigating wisdom in more in-depth ways more finely attuned to culture and religion.

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