SCHOOL OF PSYCHOLOGY

DOCTORATE IN CLINICAL PSYCHOLOGY

Sadder and wiser? Impact of depressive disorder on self-perceived wisdom in later life.

Submitted by Clare Ann Jones to the University of Exeter as a thesis for the degree of Doctor of Clinical Psychology, May 2022.

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This thesis is dedicated to my late father. Dad, we did it!!

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SYSTEMATIC LITERATURE REVIEW

What are the psychometric properties of wisdom measures?

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Abstract

Objective: There is increased interest in the concept of wisdom as a scientific construct. By building a better understanding of how wisdom can be empirically measured this can strengthen the evidence of wisdom as a scientific construct. This systematic review aims to determine whether wisdom can be empirically measured by specifically evaluating the psychometric properties of structured psychometric measures used to measure wisdom.

Method: A systematic literature search was conducted using PsycINFO, Medline and Embase with eight eligible studies identified for inclusion with a total of 3495 participants. Four seperate standardised psychometrically robust measures of wisdom met elibility for inclusion and were assessed for reliability and validity according to Terwee criteria (Terwee, 2007).

Findings: The current literature demonstrates that it is possible to empirically measure wisdom. However, it also acknowledges that evidence within this field is currently limited. Therefore, it is commendable that four highly reliable and valid measures of wisdom do exist.

Conclusion: Results from the current literature review supports findings from the research literature on wisdom as a psychological construct which emphasise the importance of determining a definition of wisdom before conducting empirical research. Jeste (2020) provide a working definition of wisdom that appears to be scientific in scope and psychometrically acceptable. Measurement of wisdom via psychometric tools are valid and reliable. Furthermore, results suggest psychometric measures of wisdom across the four different scales entered into this systematic review reliably capture the breadth of this psychological construct.

Key words: wisdom, psychometric measures, empirical

1.0 Introduction

Wisdom is a phenomenon characterised by a rich cultural history (Staudinger, 2008). The concept is long considered the ‘pinnacle of insight into the human condition’ (Baltes & Staudinger, 2000). It is noted that although the concept is universally cherished (Cohen & Kitayna, 2018) there is vast subjectivity in how wisdom is understood throughout the ages,

across cultures and more recently, where it stands as a scientific construct. (Sternberg & Gluck, 2019).

Historically, wisdom is firmly embedded within philosophical and religious contexts (Robinson, 1990). The earliest writings of wisdom from the 13th century and predominantly into western civilisation, defined wisdom as providing advice, being knowledgeable, living a good life, doing no wrong and being modest (Birren & Svensson, 2005). For example, Socrates believed "the only true wisdom is in knowing you know nothing" (Garrett, 1996, p226). Socrates felt that if he is wise, he believes he is actually not wise, this became understood as humility theory (Takahashi & Overton, 2005). Aristotle distinguished between two kinds of wisdom: theoretical and practical wisdom (Staudinger & Gluck, 2011). Theoretical wisdom refers to specialised knowledge, it refers to one's logical responses based on the knowledge they already have (Garrett, 1996). There was, however, criticism towards this school of thought. Ardelt (2003) referred to this theory of wisdom as 'cold cognition' and argued that wise thinking varies from one situation to another with a self-focus on contexts to inhibit wise thinking. Later definitions of wisdom characterised the concept of wisdom as knowledge gained from life experience, developing an understanding of the nature of the world, being compassionate, morality and using intuition (Ardelt, 2004). Particular emphasis was placed on the importance of reflection and reasoning which became known as practical wisdom. (Birren & Svensson, 2005).

Alongside the interest of wisdom theories was the advancement of knowledge in gerontology and the psychological processes of ageing. It has been found through the study of gerontology that as individuals age, there is some evidence to suggest that some

psychological and neural mechanisms such as empathy change (Beadle & De la Vega, 2019). With the older adult population growing and people living longer, a window of opportunity presents itself to develop further understanding of other concepts such as wisdom in order to contribute towards the evidence of ageing well.

Sternberg (1998) introduced the balance theory of wisdom which aimed to define wisdom as the use of one's intelligence, creativity, common sense and knowledge. Sternberg argued that wise decisions do not require intelligence alone, one must also draw upon knowledge gained through experience (Sternberg, 1998). It was further suggested that wisdom is a construct that could have important implications for individuals regarding wellbeing, happiness, life satisfaction, personal mastery and resilience (Ardelt, 2003). This supports the definition of practical wisdom in that, wisdom is knowledge that allows an individual to live well (Zagzebski, 1996). This supports Sternberg's theory of balance as he emphasised the importance of achieving balance among multiple interests, immediate and lasting consequences and environmental responses (Sternberg, 1998).

As well as wisdom having been seen as a multifaceted trait. Practical wisdom also and importantly has bio-psycho-social underpinnings (Thomas, Bangen et al, 2017). It incorporates cognitive, social and emotional processes required in everyday decision making (Nusbaum, 2016). Staudinger & Gluck (2011) highlighted that in order to engage the cognitive, social and emotional processes, one must take the time to reflect and demonstrate insight on personal life experiences. In order to do this, one must have a level of skill and hold attributes such as compassion, empathy and acceptance of uncertainty (Staudinger &

Gluck, 2011). Whilst the understanding of practical wisdom has developed there is still little understanding around how one might measure this concept empirically.

Wisdom is a multidimensional psychological construct that is essential for successfully navigating the pragmatics of life (Staudinger & Gluck, 2011). Due to a lack of consensus between researchers on the empirical definition of research, measurement of this construct will remain a challenge, Therefore highlighting the importance of the current systematic review which aims to evaluate the psychometric properties of wisdom measures. Staudinger & Gluck (2011) have reviewed the challenges of developing a sophisticated operationalised assessment of wisdom. Over the past two decades there has been attempts to develop psychometric tools to measure wisdom (Webster, 2007). The measures tend to represent a particular theory of wisdom and the concepts of wisdom vary a significant amount (Taylor et al, 2011). For example, self-report measures of personal wisdom are viewed as the most attractive, but only when personal wisdom is defined as a personality characteristic or perspective of the self (Staudinger & Gluck, 2011). Whilst they are highly practical and easy to administer, self-report measures are often influenced by individual's self-judgement and self-perception (Staudinger & Gluck, 2011). Therefore, the validity of self-report measures must be questioned.

The importance of having reliable and valid psychometrically derived measures of wisdom is key for its development and use in research and clinical work. Reliable and valid measures of wisdom will afford researchers opportunities to interrogate complex research questions with a range of populations (Gluck, 2017). This will allow us to further understand the process of wisdom attainment, how this may develop over time and the impact of life events, etc. It has

not yet been explored as to how reliable or valid current wisdom measures are, and so, this review is important in order to report their current reliability and validity so that the concept of wisdom can be confidently incorporated into clinical work.

As highlighted, operationalising the concept of wisdom is difficult, due to a limited sense of cohesion of the definition of wisdom (Gluck, 2017). Based on the various definitions of wisdom amongst researchers, Gluck (2018) established two distinct ways of measuring wisdom, a performance measure of wisdom and a self-report measure of wisdom. Performance measures of wisdom include The Berlin Wisdom Paradigm, The Bremen Wisdom Paradigm and Grossman's conception of wise reasoning. The commonality of the performance-based measures is that they measure wisdom as a competence. For example, being wise is based on rich, experience-related knowledge and good problem solving to answer complex human questioning (Gluck, 2017). Therefore, performance-based wisdom measures assumes that wisdom can measure the extent to which people's responses to open-ended problems display characteristics such as being able to acknowledge a variety of people's needs, values and perspectives.

Opposingly, researchers whose perspective sit with a performance-based mind set of measuring wisdom do not tend to view wisdom as a purely cognitive phenomenon (Baltes & Kunzmann, 2004). Instead, they believe that wisdom is a competence and therefore competence is what should be measured. Performance-based measures, such as the Berlin Wisdom Paradigm (Baltes & Smith, 1990) requires larger amount of time, expense and effort than self-report measures (Gluck et al, 2013). A further critique is that performance measures are likely to concentrate more so on general wisdom and therefore it asks participants to think

wisely about a problem or situation unrelated to their lives (Gluck et al, 2013). This is not the case for all performance-based measures of wisdom. Measures such as the Bremen Wisdom Paradigm (Mickler & Staudinger, 2008) do include a degree of self-related wisdom variables, however, still not to the degree of a self-report measur of wisdom (Gluck et al, 2013).

Self-report measures of wisdom include the three-dimensional wisdom scale (Ardelt, 2003) and the self-assessed wisdom scale (Webster, 2007) and wisdom of self-transcendence scale (Levenson, 2005). These scales look beyond wisdom as being based on knowledge or intelligence but focus more so on wisdom as a way of experiencing and reflecting on life which includes a desire to grow as an individual (Westrate & Gluck, 2017). Ardelt (2003) took the stance of Mickler and Staudinger (2008) who highlighted wisdom as 'practical wisdom' (Ardelt, 2003). As explained above, practical wisdom refers to a personality structure that allows individuals to gain experience-based insights and develop as a person from them. Gluck (2018) expanded this idea further and argued that by experiencing life and reflecting on it, this attitude will develop knowledge and competence as a result (Gluck, 2018). Ardelt (2003) depicted three personality dimensions based on this definition of wisdom. These were, reflective, cognitive, and affective. Viewing wisdom as a personality construct rather than a competence inevitably requires a different method of measuring (Ardelt, 2003). Webster (2007) proposed five components of wisdom based on his definition of wisdom. These were critical life experience, openness, emotional regulation, reflectiveness, and humour. Both Webster and Ardelt developed their own self-assessed scales under the shared understanding that wisdom is the optimal development of self and others (Webster, 2003).

Currently, self-report measures are the most used measures for wisdom (Oswald & Wu, 2010). They have the benefits of being neither time consuming nor complex to complete the questionnaires. However, due self-report measures being critiqued for high levels of socially desirable answers. It remains difficult to know whether wisdom can be definitively and empirically measured?

In order to answer the question of whether wisdom can be empirically measured it is important to test it against relevant psychometric properties usually possessed by standardised assessment tools. The current systematic review adopted Terwee et al (2007) criteria to explore whether current measures of wisdom possess the following psychometric properties; content validity, internal consistency, criterion validity, construct validity, reproducibility (agreement and reliability), floor/ ceiling effects and interpretability. The Terwee criteria was selected as it is a scientifically derived tool specifically designed for the purpose of assessing the measurement properties of standardised psychological assessments. This tool was chosen as it provided a pragmatic evidence-based approach to objectively evaluating validity and reliability that was simpler and more clinically relevant than other measures. As such this tool provides the optimal balance of rigour, brevity and accessibility for assessment psychometric properties of assessments. The use of Terwee et al, (2007) criteria afforded an opportunity to assess the reliability and validity of wisdom measures and was able to converted into a numerical format to provide a meaningful and replicable score for other researchers to adopt in any subsequent research study of wisdom

This systematic review aims to answer the above question; “What are the psychometric properties of wisdom?” It will evaluate current psychometric measurements of wisdom so that the evidence base for understanding wisdom within a clinical context will be better understood in the future and can be adapted and tested in a valid and reliable manner amongst a range of diverse clinical and research populations.

Aim: This literature review will systematically evaluate the psychometric properties (validity and reliability) of wisdom measures so as to provide evidence for empirically evaluation of wisdom.

2.0 Method

The current literature (systematic) review has followed the Preferred Reporting Item for Systematic Reviews and Meta Analyses Protocol (PRISMA-P). Each stage of this systematic review was checked in accordance with the PRISMA-P protocol (Moher et al, 2015).

2.1 Eligibility Criteria

In order to be eligible for entry into this review, peer-reviewed studies must adopt a specific focus on whether measures meet acceptable benchmark standards for validity and reliability expected of standardised psychometric assessment tools and whether such measures can therefore be useful in demonstrating components of wisdom may be able to be enhanced and in doing so, will evidence increases in levels of wisdom and wellbeing. All studies must adopt a quantitative methodological approach and studies must use a psychometric measure of wisdom. Reasons for this include, that the performance approach outlined in the Berlin Wisdom paradigm (for example) requires respondents to address a number of life dilemmas

and their responses were scored by researchers trained in wisdom assessment. This is very much based on the Baltes conception of wisdom as being about the fundamental pragmatics of life. Modern approaches derived by Gluck and Ardelt adopt an entirely different methodological approach of self-report which is more in line with the approach the current systematic review is examining. Table 4.1 details specific inclusion and exclusion criteria using PICOS in this current review.

2.2 Table 4. 1 PICOS criteria for the current study.

PICOS Inclusion and Exclusion Criteria of Systematic Review

Inclusion and exclusion criteria for literature review using PICOS Criteria
Population **Inclusion** • Community-dwelling adults aged 18 years and above who provide informed consent to participate in psychological research studies. **Exclusion** • Studies where explicit details of recruitment of population for evaluation of psychometric properties of standardised assessment of wisdom is insufficient.
Intervention

Inclusion

- Specific focus on papers whose primary aim is to report on the psychometric properties of standardised measures of wisdom with the primary variables of interest being validity and reliability data.

Exclusion

- Studies that do not report validity data, reliability data and internal consistency data.
- Studies where no psychometric data for a standardised measure of wisdom is available where the primary aim of the intervention is to report on development/replication of standardised measures of wisdom.
- Studies where psychometric properties are either secondary to primary assessment of psychological outcome evaluation or are non-existant.

Comparison

Inclusion

- Studies that report psychometric detail and structure of the standardised measurement of wisdom allowing for comparisons to establish criterion and construct validity.

Exclusion

- Studies where no data are reported on key criteria required to establish validation.

Outcomes

Inclusion

- Studies are eligible for inclusion where data is reported on indices of validity and reliability sufficient to establish psychometric properties of measures of wisdom.

Exclusion

- Outcomes reported are primarily linked to interventions or are focussed on outcomes other than psychometric properties.

Study design

Inclusion

- Studies that are evidence-based health services research that do not include a specific psychological intervention such as an RCT type design.
- Research studies evaluating and reporting on the psychometric properties of standardised measures of wisdom.
- Peer reviewed cross-sectional studies published in English, reporting a quantitative methodology whose design provides psychometric evidence for standardised measures of wisdom.

Exclusion

- Studies whose design is not suitable for evaluating validity and reliability of peer-reviewed standardised measures of wisdom (e.g. qualitative studies).
- Studies will be excluded from the current review if papers are unavailable in English, adopt a qualitative methodology if this precludes design resulting in production of validity and reliability data. The following types of studies will be excluded
    - Book chapters
    - Review articles not producing original research data.

- Systematic reviews and meta analyses

2.3 Search strategy

Three databases were chosen for the search of this current systematic review. These were: PsycINFO, Medline and Embase. Searches of each database were completed in December 2021.

Search terms were refined through a scoping exercise. See the specific search terms detailed in Table 2. Each search term was combined using the Boolean function 'AND.' Due to the results from the search scoping exercise being so broad, it was decided that only titles and abstracts were searched at this initial stage. There appeared to be a large number of irrelevant hits when full texts were searched which sought to include wisdom within the dental field.

Table 2

A description of the search strategy

Search term	Text searched
Psychometric OR Measure* OR Wisdom	Title/abstract
AND	
Wisdom OR Component* OR Define	Title/abstract
AND	

Wisdom OR Psychometric OR Measure* OR Mental Health	Full text
AND	
Depression OR Wisdom OR Post Traumatic Growth OR Measure*	Full text

Eight papers were identified by the first author and agreed by the primary supervisor. Four were then taken to the full text screening stage. The primary supervisor acted as a second rater for the quality rating of the 4 papers.

2.4 Quality Rating

To assess the methodological quality of the papers, the Terwee health status criteria (2006) was used (Terwee et al 2007). The Terwee scale measures nine (9) key characteristics of psychometrics of standardised assessments. Terwee et al (2007), outline three different category of quality for measurement properties of psychometric assessments. In our approach to quantify methodological quality we enumerated these categories as being 1, 2 or 3. For example in terms of content validity the Terwee quality criteria is as follows:

A clear description is provided of the measurement aim…

A clear description of above mentioned aspects is lacking…

No information is found on target population involvement.

For the above criteria we simply assigned a value of 3, 2, and 1 respectively.

As such the total score any psychometric measure of wisdom could achieve is 27, and a minimum is 9.

It was agreed to use this tool because it allows for meaningful comparison across different designs, methods and outcomes of studies developing psychometric measures. It takes into consideration content validity, internal consistency, criterion validity, construct validity, reproducibility, longitudinal validity, responsiveness, floor and ceiling effects and interpretability. The criteria listed are of value when comparing across current measurements of wisdom. For each measurement property, a scoring criteria indicating quality was defined from one to three as follows: little to no information found on the property assess was rated as one of out of three; A score of two out of three represented no convincing arguments for the property to be gold standard or there may be some doubt in the method; A score of three out of three represents a convincing argument that there is sufficient evidence demonstrated on the property. There was minimal disagreement between the first author and primary supervisor. Any disagreement was resolved by sourcing the original paper and checked against the criteria. This method led to 100% agreement between first author and primary supervisor.

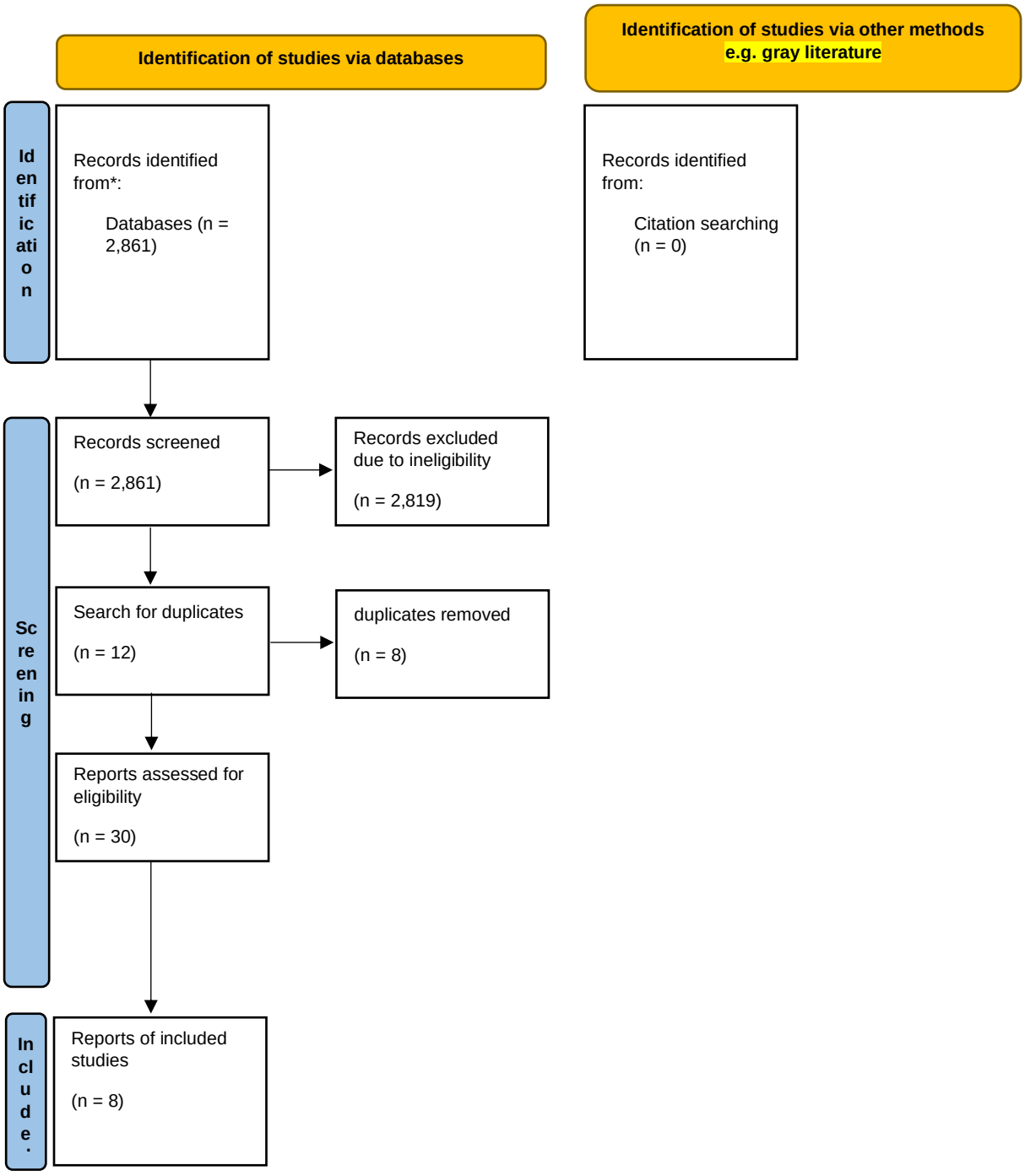
3.0 Results

A total of 2861 papers were found using the search term in Table 2. No additional papers were added through grey literature. Following deletion of duplicates, 2,849 titles and abstracts were screened for against the inclusion-exclusion criteria to be included in the review. The PICOS criteria was followed, 30 full texts were assessed for eligibility in the review. Following the review of full texts, 8 were identified to meet eligibility and the Terwee health status criteria (2006) was used.

Reasons why a significant number of papers were not included from full text was because not all studies focused on creating measures of wisdom. Papers also did not have a comparison of a psychometric structure (this refers to psychometric properties such as reliability and validity) for a measurement of wisdom and therefore could not be included. Other reasons for exclusion included, being a qualitative paper no report on validity and reliability and internal consistency statistics in the measurement of wisdom and papers that included a clinical population that were suffering an enduring mental health such as psychosis. Figure 1 describes the PRISMA flow search method.

Figure 1

PRISMA Flow Diagram of Search



4.0 Participants/Included Peer Review Studies

Eight papers were entered into the current systematic literature review (SR) and included which were also in line with the PICOS inclusion criteria. There was a total of 3,495 community-dwelling adults above 18 years of age. The majority of papers emphasised

wisdom's wide-ranging concept and the original search included papers taken from occupational psychology, health psychology, PTSD research and dentistry. None of which were relevant to the current search. Only four of the eight papers reported exact male to female ratio. This equated to a total of 564 females and 332 males. Thomas et al (2019) did not state a gender split. Thomas et al (2017) reported 51% of their population as male and 49% female. Ardelt (2003) reported 28% male and 73% female participants with Fung (2020) reporting 25.5% of their population to be male and 74.5% to be female. The overall mean age across the studies was 55.19 years.

Recruitment came from a mix of the USA, Canada, Hong Kong, Iran and Austria. Therefore, demonstrating a fairly diverse range of countries. The majority of studies recruited from a "community-dwelling" sample, meaning that most participants were independent, community living older adults. One study recruited from older adult services in Hong Kong. Other methods included a snowball technique, again, in the community and studies that compared older adults to young people recruited from colleges. All participants were from an educated background and majority were healthy although one sample used older adults using older adult services but did not state what type of services these were.

All eight papers had a focus on reporting the psychometric properties of a standardised measure of wisdom which included variables such as validity and reliability. Studies that did not report these values were excluded. Papers were also included if they reported psychometric detail in comparison to another standardised wisdom measure and also reported the comparative psychometric detail.

Table 4.1

Summary Table of Included Studies

Study	**Author**	**Country of study**	**Mean age of participants (years) and standard deviation.**	**Number of participants**	**Wisdom measurement tool used**	**Comparison**	**Valid and reliable**	**Can measure wisdom**
1	Thomas et al (2019)	USA	M = 58 (19)	524	The San Diego Wisdom Scale (SDWS)	3D-WS and SAWS	Yes	Yes
2	Webster (2003)	Canada	Sudy 1: M= 28.5 (13.37) Study 2: M =39.22 (17.67)	171	Self-Assessed Wisdom Scale (SAWS)	SAWS	Yes	Yes

			Study 3: M=52.54 (9.67)					
3	Ardelt (2003)	USA	M=71 (8.02)	180	3Dimentional -Wisdom Scale (3D-WS)	3D-WS	Yes	Yes
4	Thomas et al (2017)	USA	M =66 (21)	1,546	12 item 3D-WS	3D-WS	yes	Yes
5	Gluck (2013)	Austria	M =60.9 (16.3)	170	The SAWS, 3D-WS, The adult self-transcendence inventory and The Berlin Wisdom Paradigm	SAWS, 3D-WS, adult self-transcendence inventory and The Berlin Wisdom Paradigm	Yes	Yes
6	Fung (2020)	Hong Kong	M = 72.55 (8.47)	153	Brief wisdom development scale (BWDS)	66 item Brief wisdom development scale	Yes	Yes

7	Cheraghi (2021)	Iran	M= 33.73 (12.83)	575	Self-assessed wisdom scale (SAWS)	SAWS (in an Iranian sample)	Yes	Yes
8	Taylor et al (2011)	Canada	M = 36.60 (12.07)	176	SAWS and 3D-WS	SAWS and 3D-WS	Yes	Yes

Table 4.2

Overall Findings, Strengths and Limitations and Omnibus Terwee Quality Rating Scale

Study	**Summary of findings**	**Reliability scores**	**Strengths**	**Limitations**	**Overall Quality Score**

					(Terwee et al. 2007)
1	Results demonstrated good support for the reliability and validity of the SD-WISE scores. Results successfully measure 5 of the 6 targeted domains.	SD-WISE: .80,* .93*, .72. 3D-WS12: .74, .082*, .066. SAWS: .82*, .96*, .79.	The study was inclusive of an adult lifespan. The study makes good comparisons against two existing measures of wisdom with good psychometric properties. It has brief administration time. Its neurobiological model lends itself to clinical practice as well as in biopsychosocial research.	Being a self-report measure, you may expect to find some level of social-desirable answers. Cross-culturally, the study can make few generalisations. The study comprised a higher proportion of Caucasians and individuals with a high education status.	21

2	The study produced a reliable and valid self-administered three-dimensional wisdom scale for use in large, standardized surveys for older adults.	Reliability for all three dimensions ranged between .71 to .85*.	The scale does not attempt to measure the concept of wisdom directly. Rather, it assesses cognitive, reflective and affective dimensions of wisdom. The three dimensions were positively correlated with the 3D-WS, providing high reliability and validity for what it aims to measure. It is the first longitudinal study to test the development of wisdom over time and found a negative correlation with age.	The sample only included older adults. Future research on the 3D-WS should examine younger populations. Furthermore, the sample size was relatively small and so future research should look at a larger sample size so that the data set can represent other personality characteristics.	24
3	Three studies investigated the psychometric properties of the self-	Two week test-retest reliability assessment	The SAWS study used a broad sample of domains of wisdom	The study did not fully explore the impact social	23

	assessed wisdom scale. Results from study one reported good reliability and facture structure. Results from study two demonstrated differences in individual's implicit theories of wisdom. Study three showed good construct validity in comparison to two independent measures that also reflect wisdom.	showed .83* level of reliability. Total reliability of SAWS: .90*	(30 items, 5 dimensions). It also has clinical promise due to higher scores on the SAWS being related to independence and theoretical relevant concepts it has high construct validity.	intelligence and spirituality could have on wisdom. Some scale items do not account for any small variances. Improvement should include refining those scales to explain little overall variance. This would then allow factors to explain most of the variance in dependent variables.	
4	Due to the 39- item 3D-WS being lengthy. The 12 item 3D-WS aims to overcome this whilst still having good psychometric properties.	Reliability estimates using subscales;	The 3D-WS-12 can be administered quickly within the context of epidemiological surveys and focuses on higher	The 3D-WS maintains superiority for reliability. However, this was expected when condenses the	21

	Results suggest that the 3D-WS 12 item scale can provide efficient and valid assessment of wisdom.	3D-WS: between .69 to .70. 3D-WS12: between .62 to .64. Reliability estimates using items as indicators: 3D-WS: .86* 3D-WS12: between .73 to .74. The 3D-WS12 scores are less reliable than the 3D-WS.	order construct of wisdom. The 3D-WS and the 3D-WS-12 were both positively correlated and demonstrated similar associations with measures of mental health and well-being. The 3D-WS-12 would be a useful tool in assessing populations that may struggle to maintain attention and/or are susceptible to fatigue.	number of items significantly. It is encouraged to not take the 3D-WS-12 as a stand - alone measure.. It is viewed to account for general wisdom rather than variance associated to the cognitive, affective and reflective dimensions of the 3D-WS. The results found are confirmation of an existing theories. Future studies should sought to validate current findings on a new sample.	

5	An 18-item Brief Wisdom Development Scale was created to replicate the 66-item Brief Wisdom Development Scale. The results show that the 18-BWDS is comparable with the full BWDS. In particular, the 18-item scale holds good internal consistency, concurrent validity and factorial validity.	The proposed BWDS reliability: .93* in comparison to the 66 full item WDS: .95*	The 18-item brief version of the BWDS has good psychometric properties and has a similar alpha coefficient to the full item BWDS (0.95:0.93).	The sample study for the present study is small. Therefore, its reliability may be hindered. Demographically, participants are all over 70 and reside in older adult centres. The results, therefore, may have limited generalisability.	24
6	The study aimed to compare four well-established measures of wisdom with respect to content, reliability, factorial structure and construct validity. There was no clear cut 'best' measurement of wisdom.	SAWS: Subscales ranged between .71 to 0.88*. Total: .90* ASTI: total; .83*	There was little variation in terms of reliability between the SAWS, 3D-WS, the BWP and the ASTI. The study highlighted three different types of wisdom; personal, general and other-	It is important that researchers ensure they pick what type of wisdom they want to investigate. It would also be wise to consider whether a self-	21

	However, recommendations can be made to authors about how to select the most appropriate measure in accordance to what domains of wisdom authors are wanting to measure.	3D-WS: Subscales ranged between .61 to .77. Total: .86*. BWP: total: .85*.	related wisdom. All measures were significantly related to wisdom.	report or a performance-based measure for their study would be most appropriate. Several other existing measures of wisdom were not included in the current study.	
7	A first study to directly compare two measures of wisdom in terms of their psychometric property and theoretical relevance. Both measures were successful in predicting theoretical relevance. The 3D-WS failed to did not produce a factor structure in-line with the hypothesised dimensions, unlike the	SAWS: total, .90*. Subscales; .78, .78, .88*, .85*, .68 3D-WS: failed to produce results consistent with the hypothesised dimensions.	Results give further confidence and validates the early work of the author of the SAWS in terms of its reliability and validity. Researchers now have a choice of two measures when wanting to study the relationship between personality and wisdom.	The 3D-WS was originally designed for older adult populations and therefore it is unknown how similar younger population would respond. This is not the case the SAWS so therefore is it a fair comparison? In the SAWS, participants	23

	SAWS. However, Ardelt made clear that the 3D-WS was specifically designed for older adults.			were predominantly Australian and so cross-culturally one might argue that you can not genrealise.	
8	The SAWS positively correlated with two other measures of wisdom, indicating high convergent validity. The SAWS demonstrated excellent psychometric properties and highlighted its worth when being used cross-culturally.	SAWS; total: .89*. Subscores: .66, .81*, .63, .80*, .73, .89*.	The study compares the SAWS amongst two different sociocultural cultures, Canadian and Iranian. Evidence was found that the SAWS was comprehensible for Iranian samples, hence a significant step forward when investigating cultural similarities differences amongst cultures.	The sample used is a convenience sampling technique rather than random sample. Therefore, participants, age groups and genders were recruited from specific locations which may have caused bias in results.	23

				Self-report questionnaires were used which may invite other forms of bias. The SAWS also measures other wisdom procedures relying on non-questionnaire approaches.	

5.0 Critical Summary

All 8 studies looked at the reliability of the psychometric measures of a particular wisdom scale. 5 out of the 8 papers (studies 1, 2, 5, 7, 8) looked at the SAWS. 5 out of the 8 papers (1, 3, 4, 5, 8) looked at the 3D-WS. The other comparative measures evaluated were the SD-WISE, the BWDS and the 3D-WS12. All 8 studies produce evidence that is sufficient to differentiate psychometrically robust standardised measurements of wisdom from those with a weaker methodology.

Results fall in favour of the 3D-WS being highly reliable, for example study 2 displays reliability between .71 to .85. It is an exciting measure as it provides strong reliability for the separate domains of wisdom. However, it has predominantly been used when studying older adults. Study 7 demonstrates when the 3D-WS would not be reliable to use. Study 7 could not produce a factor structure consistent with the hypothesised dimensions. The participants of study 7 included adults. Therefore, it is concluded that the 3D-WS should assess the reliability and validity of the scale in younger samples.

The SAWS showed consistent validity in each study it was compared in (study 1, 3, 4, 6, 7,8). Study 6 compared the SAWS to the 3D-WS, the ASTI and the BWP. The SAWS resulted in the highest level of reliability, .90, when used as a full scale. However, study 6 used a broad range of measures that measure different elements of wisdom. For example, the 3D-WS measures wisdom by domains and view wisdom from a character based perspective, whereas the BWP is more of a performance based measure of wisdom and therefore would focus of wisdom as intellectual knowledge. The SAWS does however demonstrate reliability when comparing cultures. Study 8 compared reliability of the SAWS on both Iranian and Canadian samples. The SAWS produced a reliability score of .89, which is significant progress when looking to measure and compare wisdom across cultures. The sample of study 8 however did use

convenience sampling and therefore representation of a population cannot be fully relied upon as participants were selected from specific locations.

6.0 Discussion

6.1 Overview and existing literature

The current systematic review sought to explore whether standardised measures of wisdom have psychometrically robust properties. Based on the literature found in the systematic review, the review found that there are wisdom measures that have strong psychometric properties.

An outstanding acknowledgement of the current systematic review is how limited the existing research is in this field, it is therefore commendable that four highly reliable and valid measures of wisdom exist. True to the archives of research in wisdom, it appears that most of the previous research is based on an analysis of the historical growth of wisdom (Brugman, 2006). Despite this, the current systematic review, is the first systematic review that has aimed to look at the psychometric properties of wisdom measures in detail. This systematic review provides researchers with a thorough understanding of how valid and reliable current wisdom measures being used are. The findings are of great scientific relevance and will widely contribute to clinical practice as it provides sound evidence and guidance to practitioners as to what wisdom measures to use and why.

The results from the current literature review supports findings of previous studies which emphasise the importance of determining a definition of wisdom before conducting empirical research. It has remained complex to find an overarching definition of wisdom due to the difference in understanding across cultures, ages, religions and across history (Rappersberger, 2007). Despite this, Jeste (2020) appears to have achieved a working definition of wisdom which appears to be a widely accepted. The definition views wisdom as a multidimensional trait comprising of several specific components that are valuable to an

individual particularly when used within society (Jeste, 2020). By using the most recent definition of wisdom one can evaluate the methods of measuring wisdom against this definition (Webster, 2003). The current literature review used this as a working definition and found that there are four standardised measures of wisdom with strong enough psychometric properties for wisdom to be reliably and validly measured. For example, Thomas et al (2017) highlighted that wisdom is a multifaceted concept whereby different dimensions of wisdom will interact. They acknowledged that historically, wisdom has been defined as a "form of advanced cognitive functioning" (Dittmann- Kohli & Baltes, 1990). Therefore, neglecting elements such as the reflective and affective dimensions of wisdom (Dittmann-Kohli & Baltes, 1990). Thomas et al (2017) in their study defined wisdom as "an integration of cognitive, reflective and affective dimensions." Thomas et al (2017) was therefore able to look at how the three dimensions of wisdom may or may not interact with one another in order to establish how best to measure the different components, specifically for older adults. This work coincides with the most recent working definition of wisdom described by Jeste (2020) and therefore, strengthens the reliability and validity of the brief 3D-WS scale due to its alignment with current working definitions of wisdom.

When looking at previous wisdom research, it predominantly centres around ageing (Orwoll & Perlmutter, 1990). Webster (2003) compared men and women aged 18-74 years old. Using the Self Assessed Wisdom Scale, Webster (2003) the following five dimensions of wisdom were tested and attributed to a 'wise individual;' emotional regulation, humour, critical life experiences, reflectiveness and openness to experiences. The study, due to its strength in content validity affords further elaboration of how dimensions of wisdom may develop in an individual, regardless of age. However, the paper is significantly dated. The development of the SAWS was operationalised under the working definition of wisdom at that time, which was that in order to be wise an individual had to possess a level of intellect and competence in decision-making and problem solving (Webster, 2003). This must be considered when administrating the SAWS as

it is unlikely that it will take into account the nuanced current definition of wisdom which defines wisdom as a multi-dimensional trait (Jeste, 2020).

Culturally, the study of wisdom has been influenced heavily by a western population within studies (Dahlsgaard et al, 2005). In order to continue understanding wisdom as a concept it is important that research develops a universal understanding of how different cultures understands and interprets the different concepts of wisdom (Staudinger & Gluck, 2011). To do that, it is instrumental that wisdom measures are valid and reliable across cultures. Cheraghi (2021) was one of the first authors to study a wisdom measure amongst an Eastern culture. An Iranian sample was used to test the validity of the SAWS. Results demonstrated excellent psychometric properties which can be used cross-culturally.

A further consideration when looking at evaluating the psychometric properties of wisdom is based on the theory an author might develop (Staudinger & Gluck, 2011). This relates to the distinction between personal (Sternberg & Gluck, 2019) and general wisdom (Ardelt, 2003). As suggested above, this may also influence how to measure wisdom based on whether an author uses a self-report measure or a performance-based measure (Gluck, 2017) and therefore may influence the outcome of the reliability and validity on the measure used. Despite some disparity between whether to use a self-report or performance-based measure, evidence shows there still can be some overlap between wisdom being viewed as a component and wisdom being viewed as a personality trait (Gluck, 2017). Gluck (2013) highlighted in the current literature review that when comparing four commonly known measures of wisdom, there was no leading measure to recommend. Whilst it may seem difficult to lack a definitive, leading measure for wisdom when attempting to understand whether it is or is not possible to empirically measure wisdom. In fact, it emphasis that there may not be a ‘right’ or ‘wrong’ answer (Staudinger & Gluck, 2011). However, by having psychometrically valid and reliable measures of wisdom will allow researchers to flexibility investigate wisdom in a range of

contexts or in a number of ways at a more individual level. For example, through use of a self-report scale or a performance-based scale to answer a research question, empirically.

Overall, the current literature review has been instrumental in evaluating the validity and reliability on existing wisdom measures. Results show that the measures used by each author in the systematic review reliably measure the different concepts of wisdom. Furthermore, it highlights that the measures also have the potential to measure individuals cross-culturally and cross-generationally. This will allow for important comparisons to be made, to further understand the concept of wisdom. The results from the current systematic review provides evidence that there are at least four wisdom measures that have adequate psychometric properties to enable wisdom to be measured.

7.0 Strengths and limitations of the review

A strength of the current literature review was the unique topic explored. The field of wisdom is complex and remains in its infancy of translating research findings into clinical practice. By building confidence in the psychometric properties of measures used to measure wisdom will only accelerate the way in which we use the concept of wisdom within the clinical field. The range of databases that were searched was also a strength of the current literature review. By using different databases, an array of research fields was able to be explored to maximise the search for studies to be included in the review. This was particularly important in this review, due to the sparse amount of literature there is on the specific topic. The review also included participants from both Western and Eastern cultures. This, as highlighted above, is critical in understanding how wisdom is understood globally, and by having a diverse population enables high generalisability.

The review also utilised a measurement instrument that is predominantly used to assess the quality of health status questionnaires (Terwee et al, 2006) to assess the methodological quality of the wisdom measures by examining the psychometric properties in detail. The advantage of using this tool was to allow the quality of method adopted for creation of each measure to be systematically evaluated using an objective tool. This allowed the researcher and their supervisor to calculate a 'score' on quality parameters and to effectively 'weight' the quality of each measure. It was also used as a quality measurement tool that could measure the adequacy of psychometric properties used to measure wisdom. Further research may look into developing a tool to measure the psychometric properties of wisdom measure scales given the current attractiveness of studying wisdom.

A strength of this review is that it includes mental health conditions (depression) in its inclusion criteria. Current evidence supports that the psychological construct of wisdom can be used to aid the development of wellbeing and protect one from developing conditions such as depression (Ardelt & Jeste, 2016). Having reliable and valid psychometric measures of wisdom will enhance the validity to use the construct of wisdom when treating mental health conditions. Future research would benefit from understanding how wisdom as a psychological construct may be of further use of treating other mental health conditions such as schizophrenia and psychosis.

Whilst the overall sample of the studies hosts a wide range of countries. Each study recruited fairly similarly in that, most recruited from community-dwelling older adults. This lacks representation across the older adult spectrum of recruiting, for example inpatient older adult settings. It also lacks representation from those that are not highly educated.

A final limitation was that no grey literature was found for the review. It is acknowledged the importance of having grey literature as it can reduce publication bias and foster more of a balanced picture amongst the available evidence (Paez, 2017).

8.0 Implications and further directions

The current systematic review suggests that it is possible to empirically measure wisdom. The review has explored and recorded how valid and reliable measures of wisdom are. This has significantly contributed to the field of wisdom research. Literature now exists that enables researchers to select the appropriate measure based on the specific component of wisdom they wish to investigate.

Despite strong implications, considering the above limitations, there are several factors that should be considered when considering future directions. Future research in this field would benefit from establishing a solidified measurement tool that can directly measure the quality of psychometric properties of wisdom measures. The inclusion criteria should be considered and broadened. This may then allow for the field of wisdom to expand across further mental health conditions to add further value within the clinical field.

9.0 Conclusion

To sum up, this systematic review is the only review that has sought to explore whether wisdom is an empirically measurable concept. The findings indicate that it is possible to empirically measure wisdom. This has instrumental value on the way in which wisdom can be studied. From the evidence presented, it is clear that reliable and valid measures of wisdom exist especially when measuring wisdom for a specific purpose. The most commonly used as well as the most reliable appear to be the 3D-WS and the SAWS. The 3D-WS, for example is the most reliable measure when looking at specific domains of wisdom

(cognitive, affective and reflective), specifically for older adults. The SAWS is reliable for measuring five components of wisdom; openness, emotional regulation, humour, life experience and reflectiveness. These components of wisdom fall in line with the most recent definition of wisdom in that wisdom is multifaceted concept whereby it is how the named resources interact with another to provide more of a developmental explanation of how one can develop wisdom (Westrate & Gluck, 2017). Therefore, the SAWS is not only highly reliable, it has flexibility to be used on a variety of populations and is in line with the most recent working definition of wisdom.

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11.0 Appendices

Appendix A

Terwee et al Quality criteria table:

Table 1

Quality criteria for measurement properties of health status questionnaires

Property	Definition	Quality criteria[a,b]
1. Content validity	The extent to which the domain of interest is comprehensively sampled by the items in the questionnaire	A clear description is provided of the measurement aim, the target population, the concepts that are being measured, and the item selection þ AND target popu- lation and (investigators OR experts) were involved in item selection; ?A clear description of above-mentioned aspects is lacking OR only target population involved OR doubtful design or method; −No target population involvement; 0No information found on target population involvement.
2. Internal consistency	The extent to which items in a (sub)scale are intercorrelated, thus measuring the same construct	Factor analyses performed on adequate sample size (7 * # items and >100) þ AND Cronbach's alpha(s) calculated per dimension AND Cronbach's alpha(s) between 0.70 and 0.95; ?No factor analysis OR doubtful design or method; −Cronbach's alpha(s) ! 0.70 or O0.95, despite adequate design and method; 0No information found on internal consistency.
3. Criterion validity	The extent to which scores on a particular questionnaire relate to a gold standard	Convincing arguments that gold standard is ''gold'' AND correlation þ with gold standard >0.70; ?No convincing arguments that gold standard is ''gold'' OR doubtful design or method; −Correlation with gold standard ! 0.70, despite adequate design and method; 0No information found on criterion validity.
4. Construct validity	The extent to which scores on a particular questionnaire relate to other measures in a manner that is consistent with theoretically derived hypotheses concerning the concepts that are being measured	þSpecific hypotheses were formulated AND at least 75% of the results are in accordance with these hypotheses; ?Doubtful design or method (e.g., no hypotheses); −Less than 75% of hypotheses were confirmed, despite adequate design and methods; 0No information found on construct validity.
5. Reproducibility		
5.1. Agreement	The extent to which the scores on repeated measures are close to each other (absolute measurement error)	
5.2. Reliability	The extent to which patients can be distinguished from each other, despite measurement errors (relative measurement error)	
6. Responsiveness	The ability of a questionnaire to detect clinically important changes over time	

		MIC ! SDC OR MIC outside the LOA OR convincing arguments that agreement is acceptable; ?Doubtful design or method OR (MIC not defined AND no convincing arguments that agreement is acceptable); MIC > SDC OR MIC equals or inside LOA, despite adequate design and method; 0No information found on agreement. ICC or weighted Kappa > 0.70; ?Doubtful design or method (e.g., time interval not mentioned);
		–ICC or weighted Kappa ! 0.70, despite adequate design and method; 0No information found on reliability. þ þSDC or SDC ! MIC OR MIC outside the LOA OR RR O 1.96 OR AUC >0.70; ?Doubtful design or method; – –SDC or SDC > MIC OR MIC equals or inside LOA OR RR<1.96 OR AUC ! 0.70, despite adequate design and methods; þNo information found on responsiveness.
7. Floor and ceiling effects	The number of respondents who achieved the lowest or highest possible score	<15% of the respondents achieved the highest or lowest possible scores; þ ?Doubtful design or method; –O15% of the respondents achieved the highest or lowest possible scores, despite adequate design and methods; 0No information found on interpretation.
8. Interpretatability	The degree to which one can assign qualitative meaning to quantitative scores	Mean and SD scores presented of at least four relevant subgroups of patients þ and MIC defined; ?Doubtful design or method OR less than four subgroups OR no MIC defined; 0No information found on interpretation.

MIC5 minimal important change; SDC 5smallest detectable change; LOA 5 limits of agreement; ICC 5 Intraclass correlation; SD, standard deviation.

[a]

þ 5positive rating; ?5indeterminate rating; 5 negative rating; 0 5no information available.

[b] Doubtful design or method 5 lacking of a clear description of the design or methods of the study, sample size smaller than 50 subjects (should be at least 50 in every (subgroup) analysis), or any important methodological weakness in the design or execution of the study.

Appendix B:

Table used to rank papers adapted from Terwee et al

Paper for appraisal and reference:.....Levy et al 2020.....

A New scale for AX wisdombased on common domains and a neurobiological model: The San Diego Wisdom Scale (SD-Wise).

item	definition	Quality criteria	Score, 1, 2, or 3
Content validity	The extent to which the domain of interest is comprehensively sampled by the items in the questionnaire	3. A clear description is provided of the measurement aim, the target population, the concepts that are being measured, and the item selection AND target population and (investigators OR experts) were involved in item selection; 2. clear description of above-mentioned aspects is lacking OR only target population involved OR doubtful design or method; 1.No target population involvement;	3
Internal consistency	The extent to which items in a (sub)scale are intercorrelated,	3. Factor analyses performed on adequate sample size (7 * # items and >100) AND Cronbach's alpha(s)	3

	thus measuring the same construct	calculated per dimension AND Cronbach's alpha(s) between 0.70 and 0.95; 2. No factor analysis OR doubtful design or method; Cronbach's alpha(s) !0.70 or O0.95, despite adequate design and method; 1. No information found on internal consistency.	
Criterion validity	The extent to which scores on a particular questionnaire relate to a gold standard	3. Convincing arguments that gold standard is ''gold'' AND correlation with gold standard >0.70; 2. No convincing arguments that gold standard is ''gold'' OR doubtful design or method; Correlation with gold standard ! 0.70, despite adequate design and method; 1. No information found on criterion validity.	3
Construct validity	The extent to which scores on a particular questionnaire relate to other measures in a manner that is consistent with	3. Specific hypotheses were formulated AND at least 75% of the results are in accordance with these hypotheses; 2. Doubtful design or method (e.g., no hypotheses);	3

	theoretically derived hypotheses concerning the concepts that are being measured	Less than 75% of hypotheses were confirmed, despite adequate design and methods; 1. No information found on construct validity.	
Reproducibility	The extent to which patients can be distinguished from each other, despite measurement errors (relative measurement error)	3. MIC ! SDC OR MIC outside the LOA OR convincing arguments that agreement is acceptable; 2. Doubtful design or method OR (MIC not defined AND no convincing arguments that agreement is acceptable); MIC > SDC OR MIC equals or inside LOA, despite adequate design and method; 1. No information found on agreement.	3
Responsivenes	The ability of a questionnaire to detect clinically important changes over time	3. SDC or SDC ! MIC OR MIC outside the LOA OR RR O 1.96 OR AUC > 0.70; 2. Doubtful design or method; SDC or SDC > MIC OR MIC equals or inside LOA OR RR < 1.96 OR AUC ! 0.70, despite adequate design and methods; 1. No information found on responsiveness.	1

Floor and ceiling effects	The number of respondents who achieved the lowest or highest possible score	3. <15% of the respondents achieved the highest or lowest possible scores; 2. Doubtful design or method; 15% of the respondents achieved the highest or lowest possible scores, despite adequate design and methods; 1. No information found on interpretation.	1
Interpretatability	The degree to which one can assign qualitative meaning to quantitative scores	3. Mean and SD scores presented of at least four relevant subgroups of patients and MIC defined; 2. Doubtful design or method OR less than four subgroups OR no MIC defined; 1. No information found on interpretation.	1
Total score	Not all items of equal weight	Total score provides overall evaluation of quality of methodology	

Appendix C:

Table of full ratings

STUDY Methodological quality assessmer

			Comprehensiveness of scale	Cronbaxhs/homogenity of Scale	Meaurement to Gold Standard	Consistent with other measures	Reproducibility		Detection of Over Ti
Study	Author	Year	Content Validity *	Internal consistency	Criterion Validity	Construct Validity	Agreement	Reliability	Responsiv
1	Thomas et al	2019	3	3	3	3	3	3	1
2	Ardelt	2003	3	3	1	3	3	3	2
3	Webster	2007	3	3	2	3	3	3	2
4	Thomas et al	2017	3	2	3	3	2	2	1
5	Fung	2020	3	3	3	3	3	3	2
6	Gluck	2003	3	3	2	2	3	3	1
7	Taylor et al	2011	3	3	3	3	3	3	2
8	Cheraghi	2021	3	2	3	3	2	3	2

* Each element is rated as positive (3), negative (1), or indeterminate (2), depending on the design, methods, and outcomes of the study.

Appendix D:

Glossary

Term	Definition
Wisdom	This study uses the Jeste (2018) definition of wisdom; "Wisdom is a multidimensional trait comprising of several specific components that are valuable to an individual particularly when used within society."
Psychometric measure	A scientific discipline concerned with the construction of assessment tools for a specific concept.
Cognitive function	Refers to a multitude of mental abilities including learning, thinking, reasoning, remembering, problem solving, decision making, attention and reflection.
Reflective (3D-WS)	A deeper understanding of human nature through deep consideration and an overcoming of subjectivity and projections
Affective (3D-WS)	As a result of developing a deeper understanding and appreciation for human behaviour, one will see an increase in the affective dimension of wisdom
Cognitive (3D-WS)	To have a better understanding of a specific situation and how it relates to a person's intrapersonal and interpersonal of life

Ageing	For the purposes of this current study, this is the process of growing older, typically understood with a chronologically age perspective. Ageing can be described and defined in a number of ways such as biological, psychological etc.
Depression	Depression here mainly refers to Major Depressive Disorder as described by the National Institute for Health and Care Excellence (NICE) guidance as the persistent feelings of sadness and hopelessness, with these being a change of psychology state from before the onset of depression (NICE Guidance, 2009)

SCHOOL OF PSYCHOLOGY

DOCTORATE IN CLINICAL PSYCHOLOGY

EMPIRICAL PAPER

What impact does depression have on the *apperception and development* of wisdom in older adults?

Trainee Name: **Clare Ann Jones**

Primary Research Supervisor: **Professor Ken Laidlaw,**

Secondary Research Supervisor: **Dr. Nick Moberley**

Target Journal: Journal of Gerontology

Word Count: 8102

Submitted in partial fulfilment of requirements for the Doctoral Degree in Clinical Psychology

1.1 Abstract

Objective: Wisdom is a popularly perceived historically to be acquired through aging (Ardelt, 2011). However, empirical research suggests wisdom is more likely to be acquired by learning from challenges experienced in life (Gluck, 2018). This study therefore aimed to explore what effect depression has on self-perceived wisdom.

Methods: The study used a cross sectional design with 69 participants recruited to take part in an online survey using Qualtrics. The study is cross sectional design. The first part of the study adopted a cross-sectional, between groups, multivariate parametric research design for assessing depression in wisdom. The second part of the study adopted an individualised scoring survey method (Likert scoring) and will be analysed using non-parametric tests.

Participants were grouped into two categories, one group who had previously suffered depression (PREVDEP) and the second group that had never suffered depression (NEVDEP). All participants reported overcoming adversity across their lifetimes. Participants completed an online survey containing both quantitative and qualitative questions.

Results: Results show a significant difference between PREVDEP and NEVDEP participants in both reflective and affective sub-components of wisdom. There is a significant difference between PREVDEP and NEVDEP participants in the way in which NEVDEP participants felt they had coped well with traumatic experiences.

Conclusion: Depression has an effect on individuals' ability to perceive themselves as wise, particularly under certain sub-components of wisdom such as the reflect and affective subcomponent of the 3D-WS. It highlights the relevance of post traumatic growth to aid a person to develop wisdom. Finally, further research should be conducted around how wisdom is measured, specifically towards participants with common mental health conditions.

Keywords: Wisdom, overcoming adversity, post-traumatic growth, gerontology.

2.0 Introduction

2.1 Context and background

As a psychological construct, wisdom is an emerging significant body of empirical research (Gluck, 2018). This current study aims to not only contribute empirically to the fast-developing field of wisdom as a scientific construct, it also aims to explore the clinical and scientific utility of wisdom when intervening on a clinical population with common mental health conditions.

2.2 The history of wisdom

The concept of wisdom has historically featured predominantly within religious and philosophical cultural contexts (Jeste & Lee, 2018). It has been frequently discussed in religious scripts and Egyptian scrolls dating from 2000 to 1700 BC (Jeste & Vahia, 2008). The debate as to where wisdom initially developed however, remains to be unanswered (Takahashi & Overton, 2002).

The ancient Greeks recognised wisdom as an important virtue (Takahashi & Overton, 2005) and developed theories that popularised the first initial understandings of wisdom (Takahashi & Overton, 2002). Humility theories were the first theories that understood wisdom to be a characteristic associated with individuals who perceived themselves to be wise (Takahashi & Overton, 2002). Socrates believed that anyone who claims to be wise, is not wise and one should be encouraged to be aware of what knowledge they do or do not possess (Sharon, 1996). Based on Socrates' definition of 'being wise,' two theories were developed: Humility theory one (H1) which believed that if one is wise, he/she will believe they are not wise, and humility theory two (H2); which proposed that one is wise if he/she believes they do not know anything (Sharon, 1996). Both theories aimed to encourage individuals to humbly accept the things one does not know and to develop self-awareness (Matthews, 2006). Furthermore, Socrates believed one should spend time questioning those who believe themselves to be wise in order to show them that they are not. This approach captures a paradox evident in the self-measurement of wisdom, those who possess a large measure of this attribute may be wise enough to recognise caution in claiming this for fear of later providing behavioural evidence to the contrary. It is evident that wisdom is rare and measurement of it is complex (Jeste & Lee, 2019; Staudinger & Gluck, 2011).

Socrates introduced a means of understanding wisdom from a more scientific perspective. It encouraged people to understand wisdom as a trait that one may possess (Smith & Medin, 1981). Based on H1 and H2, one may hypothesis that wise people are reflective, introspective and tolerant of uncertainty all of which could be operationalised as having potentially for enhancing wellbeing and potentially holding value as good outcomes of psychological therapy within a modern setting. Whilst the Greek's understanding of wisdom did not produce a definitive definition of wisdom, it provided a philosophical basis from which

empirical science could develop more modern models of wisdom. In this way, wisdom may be conceptualised as 'excellence in the conduct and meaning of life.' (Baltes & Kunzmann, 2004, p295).

Since beginning to understand wisdom as a trait, Smith & Medin (1981) introduced a list of defining features that an individual had to possess for a person to be wise, this was known as the 'defining-features' model (Smith & Medin, 1981). The features listed within the model appeared to compliment the humility theories as both stated that individuals should have good judgement and high levels of self-knowledge (Ardelt, 2003). Whilst this supported wisdom as a characteristic. The model provides little explanation about how wisdom is considered to be about the fundamental pragmatics of life (Baltes & Smith, 2008). Baltes & Smith (2008) defined wisdom as rich factual knowledge, relativism of values and priorities and tolerance of uncertainty. This opened understanding for general wisdom as well as personal wisdom (Staudinger & Gluck, 2011). Due to this increase in understanding of wisdom as both a personal and general concept, empirical research surged.

2.3 Older adults, myths of wisdom and its scientific conception

Popular culture has historically led society to believe that to become older, means to become wiser. The idea behind this, is that the more years one lives on earth, the more life experience one gains, and therefore, the wiser one becomes. Ancient proverbs created a strong narrative for older adults that shaped the way in which elders were respected amongst their culture. Roman philosopher Cicero stated, "For there is assuredly nothing dearer to a man than wisdom, and though age takes away all else, it undoubtedly brings us that" (Cicero, 1927).

More recent empirical research suggests that wisdom may be better linked to improved emotional wellbeing (Jeste & Lee, 2019), rather than the process of ageing. Where the art of building wisdom is to build skills, practice, training, and experience (Ardelt, 2007). By utilising these skills, one is more likely to optimize human performance and where wisdom is associated with less feeling of loneliness and higher levels of compassion and fulfilment (Bower, 2021). Evidence suggests that when one makes wise decisions, this is positively related to higher levels of life satisfaction, forgiveness and improved wellbeing (Le, 2011). Having higher levels of wellbeing is important to protect oneself from mental health conditions such as depression. Often, after one has experienced an adverse life event, they are vulnerable to developing depression (Baehr, 2006). Ardelt & Jeste (2016) explained that the reflective component of wisdom is related to wellbeing. They found that wisdom buffered the negative relationship between adverse life experiences and current wellbeing (Ardlet & Jeste, 2016). Therefore, developing wisdom appears to have great benefits in improving wellbeing and protect one against conditions such a depression.

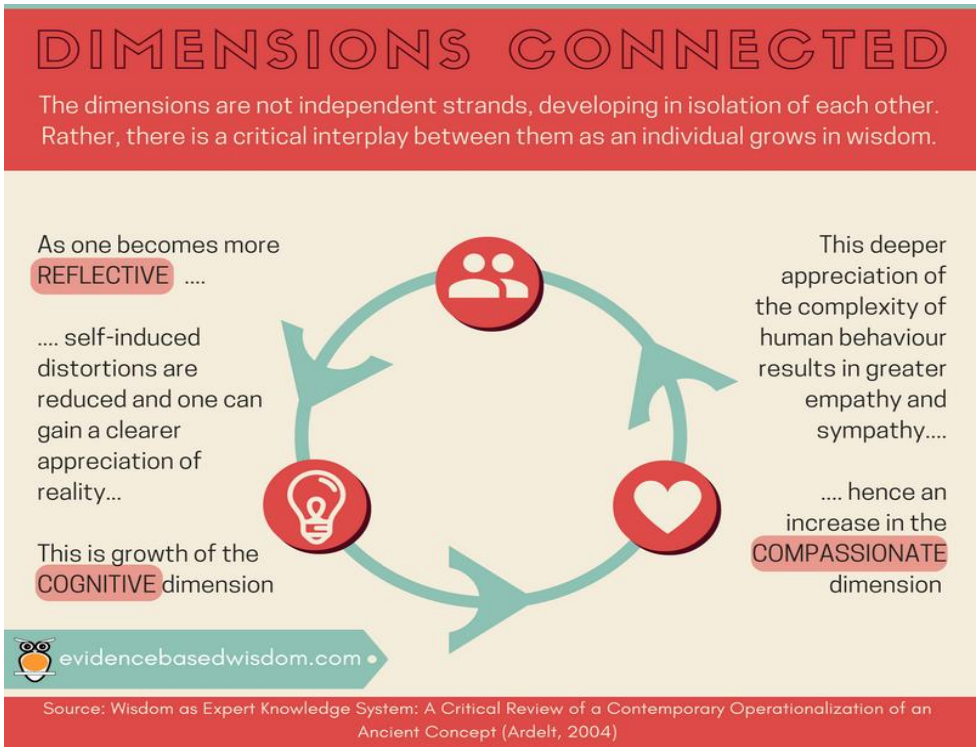
Culturally, wisdom and older adults has been defined in different ways. In both Western and Eastern societies there are clear conceptions, traditions and consensus about whom they class to be wise and components of wisdom (Staudinger & Gluck, 2011). However, research has predominantly centred around western samples and so it must be questioned, how much the development of wisdom is universal across cultures (Staudinger & Gluck, 2011). This is important to keep in mind, particularly when exploring the relationship between wisdom and older adults.

Margrit and Paul Baltes (1990) were the first to conceptualise wisdom as a science by firstly exploring a meta-theory of successful ageing known as the theory of selective optimisation with compensation. Baltes explained that older adults are more likely to compensate for losses by drawing upon life experience, social authority, and specific aging resources in order to action success in their environment and function optimally (Freund & Baltes, 1998). Margrit and Paul Baltes, (1990) described this as attaining wisdom. They defined wisdom as 'expert knowledge in the fundamental pragmatics of life' (Baltes & Smith, 2008, p 56). Therefore, people must have a level of expert knowledge in order to be wise (Baltes & Kunzmann, 2004). Margrit and Paul Baltes (1990) undoubtedly elevated wisdom as a scientific concept. However, their definition was critiqued, stating that their definition of wisdom concentrated too heavily on the level of intelligence one might need to have in order to develop wisdom (Ardelt, 2004). Whilst Ardelt (2004) agreed that a consensus towards the definition of wisdom had not been agreed. Ardelt (2004) argued that there was more to wisdom than its cognitive mechanisms alone.

Ardelt (2004) expanded upon previous ideas of researchers such as Blanchard-Fields & Norris (1995) who argued that 'wisdom is not simply one aspect of knowledge, but knowledge is only one aspect of wisdom' (Ardelt, 2004, p 104). Ardelt (2003) developed a theoretical perspective that viewed wisdom as a multifaceted and multi-dimensional construct where the dimensions within wisdom reinforce one another. These dimensions were considered to be Cognitive, Reflective and Affective (Ardelt 2004) and it was further explored that these dimensions can overlap. The dimensions of wisdom and how they overlap are outlined in figure 1.1;

Figure 1.1

Ardelt (2004) illustration of the three-dimensional components of wisdom and how they overlap.



Ardelt (2004) described these dimensions as inter-dependent of each other but also not conceptually identical either. For example, if one were to become more reflective (described by Ardelt (2004) as a deeper understanding of human nature through deep consideration and an overcoming of subjectivity and projections) one's self-induced distortions reduce and reality can be seen more clearly. The cognitive dimension is then more likely to have a better understanding of a specific situation and how it relates to a person's intrapersonal and interpersonal of life. As a result of developing a deeper understanding and appreciation for human behaviour, one will see an increase in the affective dimension of wisdom. Ardelt (2011) emphasised the importance of acquiring a variety of knowledge in order to to learn from life experiences, rather than intellectual knowledge alone (Ardelt, 2011). Despite such progress in understanding wisdom as a scientific concept. Ardelt's model can be seen as too

simplistic when describing the components related to overcoming adversity (Gluck, 2020). Ardelt (2004) has been criticised for not including key resources to enable individuals to gain wisdom-related insights about life such as emotion regulation and humour (Gluck, Bluck & Westrate, 2019). It furthermore lacks a deep understanding of why and how someone can incrementally develop wisdom through dealing with life experiences.

Gluck & Bluck (2013) developed the MORE life experience model which proposed that the following resources; Mastery, Openness, Reflectivity and Emotion Regulation/ Empathy (MORE) form a "positive syndrome" that helps individuals to manage challenges in life. It Wanted to describe why some individuals will develop wisdom and why others will not (Gluck & Bluck, 2013). When describing the resources, Gluck & Bluck (2013) described a sense of mastery, as an individual's awareness of the uncontrollability of a life event. Openness is the awareness one has of the fact that there are multiple perspectives on every phenomenon and there is a motivation to learn about new perspectives. Reflection describes the willingness to look back at life events in a deep and complex manner. Finally, emotion regulation/ empathy is the ability to manage and regulate one's own emotions, do not suppress negative feelings but also do not dwell on them. The model is clear in that it does not view the above resources as stable personality characteristics that one does or does not possess when encountering a life challenge. Rather they develop over the life span alongside with wisdom (Gluck & Bluck, 2013). An example of the resources interacting might be when one if regulating their emotions, are open to other views and reflecting upon themselves in that role, may advance one's emotion regulation skills and sense of mastery and therefore will develop further in wisdom (Gluck & Bluck, 2013). Importantly, Gluck & Bluck (2013) also highlighted the importance of having these experiences in order to foster the resources is equally as important. The current understanding of wisdom is in favour of the MORE life

model, particularly for its description of how the resources interact with wisdom and providing a more developmental approach to developing wisdom.

More recently, research has explored how the development of wisdom may foster the process of Post Traumatic Growth (PTG). Weststrate & Gluck (2017a) suggest that growth in wisdom after a challenging life experience arises because of self-reflection. This conceptualization adopts a dynamic perspective that understands the development of wisdom as more than an outcome of the experience of adversity. "Wisdom-fostering forms of self-reflection require that individuals explore their own role in the occurrence of negative life events, confront and examine negative feelings, and do the effortful work of finding meaning in the difficult experience." (Westrate & Gluck, 2017b, p810).

Furthermore, it also allows one to enquire about how one acquires such dimensions in order to increase one's chances of developing wisdom. It can be a common thinking to believe that suffering is bad for a person. However, In many ways suffering can be helpful to an individual from both intrinsic (bodily systems nurturing repair) and extrinsic (productivity of virtues such as patience, compassion and humility) perspective (Brady, 2019). By engaging with these processes, one may be more likely to develop what is known as Post Traumatic Growth.

2.4 Post Traumatic Growth and wisdom

Calhoun & Tedeschi (2004) introduced the psychological concept of post traumatic growth. Tedeschi (2008) observed that people develop new understandings of the world around them following an adverse event. This also includes how one understands themselves and how they relate to other people post event. PTG can cause significant change to how an individual

wants to live their life following a challenging experience (Tedeschi, 2014). Tedeschi & Calhoun (2004) identified seven areas of growth that can develop following adversity; greater appreciation of life, greater appreciation for relationships, increased compassion and altruism, identifying new opportunities and purpose in life, increased awareness of personal strengths, enhanced spiritual development and development of creativity. A key part of capitalising on adversity is 'cognitive exploration.' This is the ability to fully explore thoughts, feelings and believes surrounding the event. It requires individuals to have a level of curiosity about the challenges experienced and an element of flexibility in processing the information. By remaining curious and flexible, one is more likely to psychologically shift their thinking and relation to the world, self and become more motivated to change ones thinking to build new meanings to the situation (Tedeschi & Calhoun, 2004).

Current literature overall supports PTG and wisdom being separate psychological concepts (Plews-Ogan, Ardelt & Owens, 2019). PTG can be viewed as a positive adaption towards a traumatic experience that can give new meaningful cognitive processes (Yang & Ha, 2019). Wisdom, however, is considered more a psychosocial maturity that inegrates cognitive, reflective and emotional personality traits (Yang & Ha, 2019). Despite evidence viewing these two concepts as separate, there is also evidence to suggest that the two concepts might overlap and complement one another when attempting to understand the process of optimising opportunity to develop wisdom (Bangen, Meeks & Jeste, 2013). Both concepts acknowledge the importance of cognitively processing an adverse experience. In doing so, one will more likely recognise the importance of reflection and as a result develop higher levels of compassion (Bangen, Meeks & Jeste, 2013).

Tedeschi & Calhoun (2004) describes a process of reflection one may journey through following an adverse experience. Jayawickreme, Brocato & Blackie (2017) investigated the interplay between personality traits and the process of finding meaning and gaining wisdom. The authors identified three personality traits that would aid an individual to interpret stressful events as an opportunity for wisdom. These were openness to experience, extraversion and emotion regulation. These findings can relate to the MORE life experience model in supporting the importance traits such as openness and emotion regulation are when wanting to develop wisdom (Gluck & Bluck, 2013).

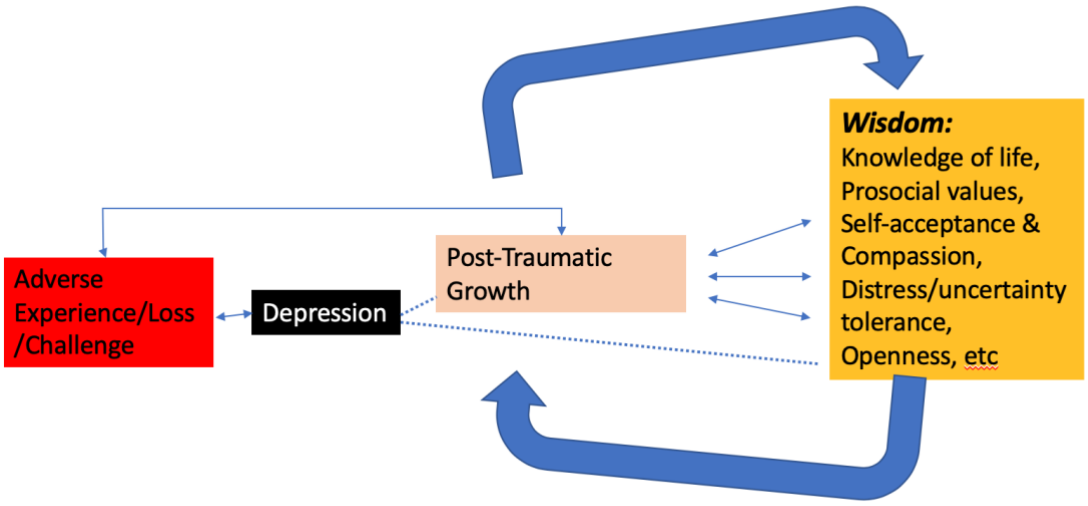
2.5 Older adults, major depression and post traumatic growth and wisdom

In some circumstances ageing can present individuals with challenges, however there are as many experiences of ageing as there are older people (Laidlaw & Kishita, 2015) therefore an individual evaluation of the perception of ageing is useful when approaching this matter.

Major depressive disorder (MDD) is described by the National Institute for Health and Care Excellence (NICE) guidance as the persistent feelings of sadness and hopelessness they once enjoyed (NICE Guidance, 2009). Individuals can experience both emotional and physical symptoms which must be present for at least two weeks (NICE, 2009). The below diagram describes how depression can hinder the typical pathway towards achieving wisdom.

Firgure 1.2

Diagram to describe depressions interference on wisdom pathway



When an individual suffers an adverse experience, it opens opportunity to develop post-traumatic growth. PTG allows an individual to learn from their adverse experience, gain knowledge of life, be open to uncertainty and develop self-acceptance and compassion. A person who develops such attributes is likely to be perceived or perceive themselves as wise. Depression can block a seamless pathway to obtaining wisdom due to its nature of hindering an individual's reflective ability.

Cognitively, depression can have a large effect on one's attention, executive functioning, memory and processing speed (Perini et al, 2019). Based on those characteristics, one might expect depression to hinder one's ability to develop post traumatic growth. There is little research exploring the association between depression and post-traumatic growth. Li et al (2021), studied the relationship between depression, anxiety and post-traumatic growth amongst bereaved adults. They found that those suffering with depression and anxiety had a low probability of post traumatic growth. It is noted, that, depression and/or anxiety can

cloud one's ability to see 'new possibilities' for their future following an adverse experience (Li et al, 2021). A fundamental part of PTG is 'cognitive exploration' (Kircanski, Joormann & Gotlib, 2012). This is the ability to fully explore thoughts, feelings and believes surrounding an event. It requires individuals to have a level of curiosity about the challenges experienced and an element of flexibility in processing the information. Flexibility and curiosity enable one to be more open about an adverse experience which increases the likelihood of finding new and positive meaning from the situation. Li et al (2021) proposed that depression hinders one's curiosity and flexibility, one might then expect to be closed to traits such as openness which, as highlighted, is evidenced to facilitating the development of wisdom (Gluck & Bluck, 2013).

As demonstrated, there is a distinct lack of empirical research on how post traumatic growth can be hindered by depression. There is even fewer literature surrounding how a specific mental health condition can affect post traumatic growth and therefore obstruct opportunity to develop wisdom. This current study therefore explores the utility of wisdom for enhancing wellbeing and reducing depressive affect. Whilst it may be argued depression is a traumatic experience in itself and therefore some individuals may develop post traumatic growth following depression, the current study adopts a stance that individuals who have previously suffered depression will not have developed post traumatic growth and therefore will not perceive themselves to be wise. This is based on the evidence that the characteristics of depression impede on one's ability to tolerate uncertainty or distress and be open to change or allow themselves to be self-compassionate (Ardelt & Jeste, 2016). Furthermore, Williams et al (2007) evidenced that when one is depressed, their recall is overgeneralised and therefore unable to reflect objectively. Therefore, one will be unable to appraise the experience of

depression due to being unable to learn from past experiences or reflect on one's own experience and as a result, wisdom is unable to develop (Williams et al, 2007).

To summarise, wisdom as a stand-alone concept has been on and remains on a significant journey within the scientific field. With the definitions of wisdom and understanding of the concept of wisdom becoming more aligned. There has never been a more exciting time to further contribute to the literature of wisdom and strengthen its empirical library. Taking all the current literature into account. This study finds it imperative that the following question is explored:

What impact does depression have on the *apperception and development* of wisdom in older adults?

2.6 Aims and hypothesis

This study is one of the first studies to examine wisdom from this psychological standpoint. Its aims are;

1. To examine how wisdom is apprehended and recognised as a personal attribute amongst older adults who have previously suffered depression and those that have never suffered depression following an adverse experience.

2. To explore whether wisdom has a positive effect on wellbeing and potential effects on aging
3. To explore the effects of people who have previously been depressed can have on the perceived attainment of wisdom

2.6.1 Null hypothesis

Participants who have a previous experience with depression will not report any affect-congruent negative apprehension of self-reported wisdom. Specifically, there will be no statistical differences on self-report measures of wisdom between individuals who have previously experienced depression and those that have never experienced depression following adverse experiences

2.6.2 Hypothesis 1a:

It is hypothesised that those who have previously experienced depression will report a negative perception of wisdom as measured by psychometrically robust self-report questionnaires in comparison to participants who have never experienced depression. This will be demonstrated by participants perceiving themselves to be less wise and scoring low on the 3D-WS and BSAW.

2.6.3 Hypothesis 1b:

It is hypothesised that participants who have never experienced depression will report higher levels of post traumatic growth as measured by the Post-Traumatic Growth Inventory (PTGI) in comparison to participants who have previously experienced depression.

2.6.4 Hypothesis 2a:

It is hypothesised that those that have considered themselves to have coped well from adversity are more likely to consider themselves to have higher levels of wisdom than those that that believe they have not coped well from adversity.

2.6.5 Hypothesis 2b:

It is hypothesised that those that believe they have emotionally and psychologically grown following a traumatic experience will consider themselves to be wiser than those that do not feel they have emotionally and psychologically grown following a traumatic experience.

2.6.6 Hypothesis 3:

It is hypothesised that those who develop post traumatic growth, measured by PTGI scores, as a result of a traumatic events will report higher levels of wisdom, mesasured by the 3D-

WS and BSAWS scales, as a result of learning from adversity. Therefore, it is expected post traumatic growth inventory scores (IV) will predict wisdom scores (DV).

3.1 Method

3.1 Design

The current study is a cross-sectional correlational design. The first part of the study adopted a cross-sectional, between groups, multivariate parametric research design for assessing whether those who have previously been depressed can perceive themselves to be wise. The study recruited two groups; group 1: individuals who have previously experienced depression (PREVDEP) and group 2: individuals who have never experienced depression (NEVDEP).

The second part of the study adopted an individualised scoring survey method (Likert scoring) and will be analysed using non-parametric tests. To evaluate self-perception of wisdom from an individual's perspective, the study adopted a CBT timeline (See Laidlaw, 2015; 2020). According to Laidlaw (2021) timeline is simply a summary of a person's lifespan development history from the idiosyncratic and here and now perspective of someone who is depressed or has an anxiety disorder. How a person views what is important rather than the factualness of veracity of these accounts is important. Timelines capture an individual's appraisal of their life and it is important to identify what points in their life that they reference as important life events. The technique is very simple and rudimentary and was designed as such. Individuals are instructed to provide a summary of experiences online across their lifespan. There is no commentary or attitude required about events and

experiences as individuals are asked to list events they consider important. The viewpoint adopted by clients is encouraged by use of the following phrase. ‘Everything you have lived through has helped to make you the person you are today.”

The timeline task afforded an opportunity for a more individual evaluation of self-assessment of wisdom based on idiosyncratic recall of adverse life events. As such this was evaluated using a series of Likert type questions. The timeline technique has been evaluated as efficacious in reducing depression and enhancing wellbeing (Kadri et al. *in press*). It required participants to re-call significant events from their past that was meaningful to them. Participants were then encouraged to elaborate on the meaningfulness of events idiosyncratically.

3.2 Participants and recruitment

The study recruited two groups of community-dwelling older adults, all of whom were aged 60 years and above. Wisdom has historically been associated as an outcome of age. Research suggests thaty wisdom is less to do with factors such as age and more to do with individual experience and active psychological response to experience. Nevertheless a common apprehension links wisdom with ageing. As such we explored our research with an older population as a first step towards clarifying self-perception and self-identification of wisdom. As highlighted on page 67 there is a research gap with a distinct lack of research on how mental health conditions may affect post traumatic growth and therefore obstruct opportunity to develop wisdom. Considering older adults have a wealth of experiences to reflect upon. It was decided that older adults would be the most appropriate target population for the study. This has been elaborated on page 72 and highlighted as appropriate. Participants were

required to complete an online battery of questionnaires, demographic questions, measures of depression and anxiety and finally a series of Likert questions about individual indices of wisdom and learning from experience.

Initially, advertisement of the study was executed via social media platforms such as facebook, twitter and Instagram. All DclinPsy courses across the UK were emailed via their named admin contact and asked to circulate the questionnaire to all year groups. The study adopted a snowball sampling style to ensure advertisement kept momentum.

The study recruited 69 participants in total. 20 Of these participants, 20 reported having previously experiencing depression (PDEP) but currently were not experiencing depression. Additionally, 49 participants reported never having experienced depression (NEVDEP).

The following exclusion/ inclusion criteria for participants in each group were adopted:

Group 1 (depressed participants): Inclusion and exclusion criteria	
Inclusion criteria	Exclusion Criteria
Depressive symptoms	A diagnosis of psychosis
Receiving treatment for depression	A diagnosis of dementia
Recently received treatment for depression through either primary or secondary care	Individuals below the age of 60
Aged above 60 years of age	Unable to read and write

Be able to read and write	

Group 2 (non-depressed participants): Inclusion and exclusion criteria	
Inclusion criteria	**Exclusion criteria**
Co-morbidity of physical health such as Parkinson's disease, diabetes, heart disease	A diagnosis of psychosis
Be able to read and write	A diagnosis of dementia
Age above 60 years of age	
	Individuals below the age of 60
	Individuals who are unable to read and write
	Has current or previous diagnosis of depression
	Has been showing sign of depression or anxiety

3.3 Sample Characteristics

Table 3.1 provides a summary of characteristics gathered from the whole sample. Overall, 69 participants were recruited to this study. This included 15 male and 49 female participants, 1 identified as 'other' and 4 did not specify. All participants were aged 60 years and older. The mean age for the sample as a whole was 66.8 (SD = 6.70). There were two self-identified groups in this sample; a previously-depressed group (PREVDEP; n = 20) and a never-depressed sample (NEVDEP; n = 49). 49 participants did not fully complete the survey and exhibited missing data, and this was dealt with for each variable in turn, with any missing data excluded from that analysis.

Sample characteristics for both groups and overall sample are outlined in table 3.1 below.

Table 3.1

Table of Characteristics

	Overall Sample	Subgroups			
		Depressed	Never Dep	*t*	*p*
Age, *M* (*SD*)	66.8 (6.70)	65.5 (5.67)	67.4 (7.01)	1.03	.30
Gender: female, *n* (%)	49	15 (30.6%)	34 (69.4%)	$X^2(2,69)=.506,p=.776$	

Male, n (%)	15	4 (26.7%)	11 (73.3%)		
Other	5	1 (20%)	4 (80%)		

Psychometric scores, *M (SD)*	M (SD)	M(SD)	t	*p*
Depression measure – PHQ - 8	14.8 (4.26)	10.7 (3.39)	3.97	<.001
Anxiety measure - GAS	19.1 (5.82)	14.39(3.69)	3.80	<.001
Wisdom measure – 3D-WS	140.06 (17.70)	149.645(20.75)	1.53	.387
3D-WS cognitive component	48.06 (8.53)	46.06 (8.91)	.736	.836
3D-WS affective component	47.81 (4.40)	52.48 (8.32)	2.10	<.001

3D-WS reflective component	44.76 (8.91)	52.77 (9.76)	2.85	.544
Wisdom measure – BSAWS	43.26 (5.75)	41.31 (6.69)	.983	.870
Post traumatic growth Inventory - PTGI	79.40 (25.72)	67.06 (25.91)	1.52	.817

3.4 Measures

The following measures were used;

Anxiety – The 10-item Geriatric Anxiety Scale (GAS). This scale is used to identify and highlight common symptoms of anxiety or stress. It is a diagnostic tool for assessing anxiety status in older adults, **(**Segal, 2010). The GAS has a wealth of evidence of reliability and validity in clinical samples of older adults, (Segal, 2010). Segal & Mueller (2019) tested the reliability and validity of the GAS with amongst 38 older adults aged between 60 and 90. Results showed good Cronbach alphas at .94 as well as good reliability values including cognitive .89, affective .87 and somatic .79. Therefore, the GAS will be utilised in the current study.

Depression – The Patient Health Questionnaire (PHQ-8). The PHQ-8 omits PHQ question 9, "have you, in the last two weeks had thoughts that you would be better off dead, or of hurting yourself in anyway." This was because due to COVID restrictions, the current study could not directly safeguard participants who were experiencing current detrimental or suicidal thoughts and the ethics committee required the use of PHQ8 as a condition of approval. The PHQ-8 allows individuals to self-rate the frequency of various depressive symptoms using a 4-point scale: "not at all," "several days," "more than half the days," and "nearly every day." It has been proven to be a valid and reliable tool to screen for depression in several populations such as adults and older adults. The PHQ-8 reports good Cronbach alpha at .82 (Kroenke et al, 2009).

Post traumatic growth inventory (Tedeschi & Calhoun, 1996), is a 21 item self-report scale that aims to assess positive outcomes in response to traumatic events. The PTGI incorporates 5 factors; relating to others, new possibilities, personal strength, spiritual change and appreciation of life. The PTGI reported Cronbach alpha of .93, demonstrating high validity and reliability.

Wisdom - The three-dimensional wisdom scale (3D-WS). Developed by Ardelt (2003), this scale aims to measure three important dimensions of wisdom. These are cognitive, reflective and affective. To assess the three dimensions of wisdom, the 3D-WS consists of 14 items for the cognitive, e.g. "Is it better to know too much about things that cannot be changed?" 12 for the reflective, e.g. "I would feel much better if my present circumstances changed." Finally, 13 for the affective domain of wisdom, e.g. "I am annoyed by happy people who just feel sorry for themselves." It is considered to be one of the most reliable and valid instruments when measuring wisdom (Gluck, 2018). Taylor et al (2011) reports Cronbach alphas between 0.74 to 0.78. Its 10 month test-retest reliability score was recorded as 0.85 indicating high levels of validity and reliability.

Wisdom – The Brief Self Assessed Wisdom Scale (BSWAS). A 9-item questionnaire that asks individuals to indicate their level of agreement using a Likert scale on a series of statements that reflect an individual's personal experience. Fung, Chow & Cheung, (2020), compared the BSWAS to the original 40-item self-assessed wisdom scale (SAWS). Results supported the consistency, convergent validity and construct validity of the BSWAS. Taylor et al (2011) reported Cronbach alpha for the overall scale was 0.904. The measure also had a 2 week test-retest reliability value of 0.84 (Webster, 2007). Both values indicate high levels of reliability and is therefore proposed to use in the current study.

The use of a CBT timeline – this will aim to incorporate a more idiosyncratic evaluation element of wisdom and lifespan experiences. According to Laidlaw (2021) timeline is simply a summary of a person's lifespan development history from the idiosyncratic and here and now perspective of someone who is depressed or has an anxiety disorder. How a person views what is important rather than the factualness of veracity of these accounts is important. Timelines capture an individual's appraisal of their life and it is important to identify what points in their life that they reference as important life events. The technique is very simple and rudimentary and was designed as such. Individuals are instructed to provide a summary of experiences online across their lifespan. There is no commentary or attitude required about events and experiences as individuals are asked to list events they consider important. The viewpoint adopted by clients is encouraged by use of the following phrase. 'Everything you have lived through has helped to make you the person you are today."

A Likert approach to measurement was adopted as there are no psychometrically robust measures available to suit the purpose of this aspect of the current study. Participants were asked to identify significant memories throughout their lives on their timelines. They were asked to state the date of occurrence and provide a reason that this event was significant to

them. For example, “1972; the year my first child was born.” Participants were then encouraged to reflect on their personal timeline and answer the following questions:

1. In retrospect, do you believe you have coped well with the traumatic events you have experienced?
2. looking at how you have managed setbacks, what have you learnt about yourself?
3. consider your own timeline and how you answered the above questions, do you think it possible that you have psychologically or emotionally grown as a result of your previous experiences?
4. on a scale of 0-100 (0 being least agreement, 100 being strongest agreement) as a result of all your life experiences how much do you agree you are now more reflective, more forgiving of others and more accepting of the frailty of human intention?
5. on a scale of 1-10 (1 being least agreement, 10 being strongest agreement) how much do you agree that as a result of your life experiences, you are more concerned about the welfare of others and more able to recognise that at times and in crises recognise that one may need to tolerate uncertainty and regulate emotions as best as possible in order to get by?
6. Reflecting on your timeline and the answers you have provided above. Do you consider yourself to be wise?

3.5 Procedure

A survey was created after rigorously evaluating the evidence for the most appropriate measures to use. Once this was created and ethical approval had been granted, the survey was

advertised through social media, older adult forum's and DClinPsy universities. Universities were included to develop a snowball effect of individuals who might have felt they knew any older adults that they could forward the survey to, for example if they could forward to grandparents, or their local community clubs for older adults. Individuals who were interested in taking part in the study were required to read an information sheet and then complete a consent form (See Appendix A) before continuing to the survey. Qualtrics was chosen due to the fact it is currently a popular survey platform specifically used for online experiments, survey research and data collection (Molnar, 2019). It was also deemed the most appropriate platform for the target sample. It does not require any programming skills or installing new software and it is free. When creating the survey, Qualtrics has customizable features that can be adapted in order to ensure the target sample can easily understand the task and take into consideration elements such as font size to ensure an easy read. Once individuals had started the survey, they had two weeks to complete it which allowed for individuals to complete the survey in their own time. The questionnaire asked participants to complete an anxiety and depression scale, a post traumatic growth inventory, two wisdom scales and their own CBT timeline. The use of the timeline aimed to capture whether participants considered themselves to have developed wisdom after experiencing a traumatic or challenging event in their lives. Two groups were compared; group one, participants had previously experienced depression, group two; participants had never experienced depression. There was particular interest in exploring whether those that had previously been depressed would consider themselves to be wise. All data was collected via Qualtrics.

4.0 Results

4.1 Data analysis summary

T-tests were used as demonstrated in table 3.1, page 75 to produce a set of comparisons that aim to compare the means of two groups, in this case; NEVDEP and PREVDEP group. A one way ANOVA was conducted for hypothesis 1a and 1b to test for statistical significance between PREVDEP and NEVDEP against wisdom scores and post traumatic growth scores. A Chi-square test was run to test hypothesis 2a, b and c and examine the relationship between depression status and rating of coping following an adverse experience, psychological growth and whether participants consider themselves to be wise. A Wilcoxon signed ranked test comparison was performed to test hypothesis 2d and e to examine the relation between depression status and self-perceived levels of reflection. Finally, a regression was performed on hypothesis 3a, b, c, d and e to examine whether the dependent variable (wisdom scales) are associated with changes in variables such as post traumatic growth and specific components of the wisdom scales in order to establish if one subscale significantly predicted another subscale.

4.2 Comparison of mood scores between groups

As expected, there were statistically significant differences between participants in the PREVDEP group in comparison to those in the NEVDEP group as assessed by the PHQ-8 , t(63) = 1. 03, p = .30, (2-tailed). Likewise, as expected, there were statistically significant differences between participants in the PREVDEP group in comparison to those in the NEVDEP group as assessed by the GAS, t(59) = 3.08, p < .001 (2 tailed). There was no statistically significant difference between the age of those NEVDEP and PREVDEP, t(63) = 1. 03, p = .30 (2 tailed). There was no difference between male and female participants who completed the survey, X_2 (2) = .506, p = .78.

4.3 Summary of analyses of subgroups

An important first step in conducting an analysis of the hypotheses for this current study is ensuring that the two groups are able to be differentiated in terms of affective mood status. The data above demonstrates that there are significant differences between the two groups in terms of this important criteria. The PREVDEP group reports different scores on the PHQ8 and GAD7 in comparison to the NEVDEP group, confirming valid self-assessed mood status.

The use of opportunistic sampling meant it was inevitable to have unequal sample sizes. A conservative approach to data analysis was adopted. Prior to adopting a parametric analysis, non-parametric equivalent analysis were run which showed no differences in statistical significance.

4.4 Hypothesis driven analysis of results

4.4.1 Hypothesis 1a

It is hypothesised that depression levels as assessed by the PHQ8, will impact perceived development of wisdom. It is predicted that PREVDEP group will perceive themselves to be less wise and score lower on the 3D-WS and BSAWS in comparison to NEVDEP group.

There was no statistically significant difference between participants in the PREVDEP group in comparison to those in the NEVDEP group when participants self-rated levels of wisdom on the 3D-WS, $F(44) = 1.54$, $p = .13$ (2 tailed). There was also no statistically significant difference between participants in the PREVDEP group in comparison to those in the

NEVDEP group when participants self-rated levels of wisdom on the BSAWS. F(48) = .98, p = .33 (2 tailed).

When analysing the 3D-WS, there were no statistically significant differences between the groups. Due to the fact that there are separate components of the 3D-WS (Affective, Cognitive, Reflective) these were further examined in order to investigate whether there are statistical differences between the three domains and the two groups PREVDEP and NEVDEP. This aimed to minimise regression to the mean as randomly occurring observations are compounded by groups e.g. if the cognitive element produced a high frequency of random error, it would significantly impact the group mean which may impact statistical significance.

The 3D-WS cognitive subscale showed no significant results between NEVDEP and PREVDEP participants, $F_{(1, 45)} = .546$, $p = .46$.

When comparing PREVDEP and NEVDEP group participants scores on the 3D-WS reflective subscale there was a statistically significant difference $F_{(1, 50)} = 8.13$, $p = .006$. This result partially supports hypothesis one in that those that have previously been depressed appear to perceive themselves as having lower levels of wisdom in comparison to participants who have never been depressed.

There was a statistically significant difference on 3D-WS affective domain between participants who had previously been depressed ($M = 47.8$, SD = 4.40) and participants who

had never experienced depression (M = 52.5, SD = 8.33), $F(_{1, 47.8)} = 6.85$, p = .012). The 3D-WS affective component showed a violation on the Levene's test for equality of variances. Welch's F was used where group sizes are unequal as is the case with data in this research, and where homogeneity of variance assumption have been violated. As such we adopted the use of Welch's F test to account for the difference in variance between the NEVDEP and PREVDEP group for the affective component of the 3D-WS. This again was in-line with hypothesis one, whereby it was hypothesised that those that have previously suffered depression would rate their wisdom lower than those that have not experienced depression.

4.4.2 Summary of hypothesis 1a.

There was statistically significant difference between PREVDEP and NEVDEP on baseline levels of the PHQ-8 and the GAS. This was to be expected. However, there were no statistical differences between PREVDEP and NEVDEP on baseline levels of age and gender. There was no statistical significant differences between PREVDEP and NEVDEP participants on both the 3D-WS and BSAWS. However, there was a significant difference in scores between PREVDEP and NEVDEP groups for both the reflective and affective subscale of the 3D-WS.

To conclude, hypothesis 1a is partially supported in that those that have previously been depressed are more likely to score lower on the wisdom scale, in this case the reflective and affective component of the 3D-WS compared to those that have never been depressed.

4.4.3 Hypothesis 1b

Hypothesis 1b predicted that participants who have never experienced depression will report higher levels of post traumatic growth and this will be demonstrated by previously depressed participants scoring lower on the post traumatic growth inventory in comparison to never depressed participants.

The PTGI showed no statistically significant differences between PREVDEP (M=79.4 (25.7) and NEVDEP (M=67.06 (25.9)) participants, $F(1, 44) = 2.30$, $p = .136$ (2-tailed).

When analysing the PTGI and depression status there were no statistically significant differences between the groups. As there are five domains (subscales) of the PTGI scale, (appreciation of life, spirituality, new possibilities, personal strength and relation to others) these were further examined in order to investigate whether there are statistical differences between the three domains and the two groups PREVDEP and NEVDEP.

No statistical differences were found between PREVDEP and NEVDEP participants when comparing the PTGI subscores of appreciation of life, spiritual and relation to others. However, there was a statistical difference between PREVDEP and NEVDEP participants when comparing the PTGI subscale of new possibilities $F(1, 47) = 4.16$, $p = .047$. There was also a statistical difference between PREVDEP and NEVDEP participants when comparing the PTGI subscale personal strength, $F(1,47) = 4.67$, $p = .036$.

4.4.4 Summary of hypothesis 1b

No statistical differences were found between PREVDEP and NEVDEP participants when comparing scores on the PTGI. This therefore rejects hypothesis 1b which predicted that NEVDEP participants would score higher on the PTGI compared to PREVDEP.

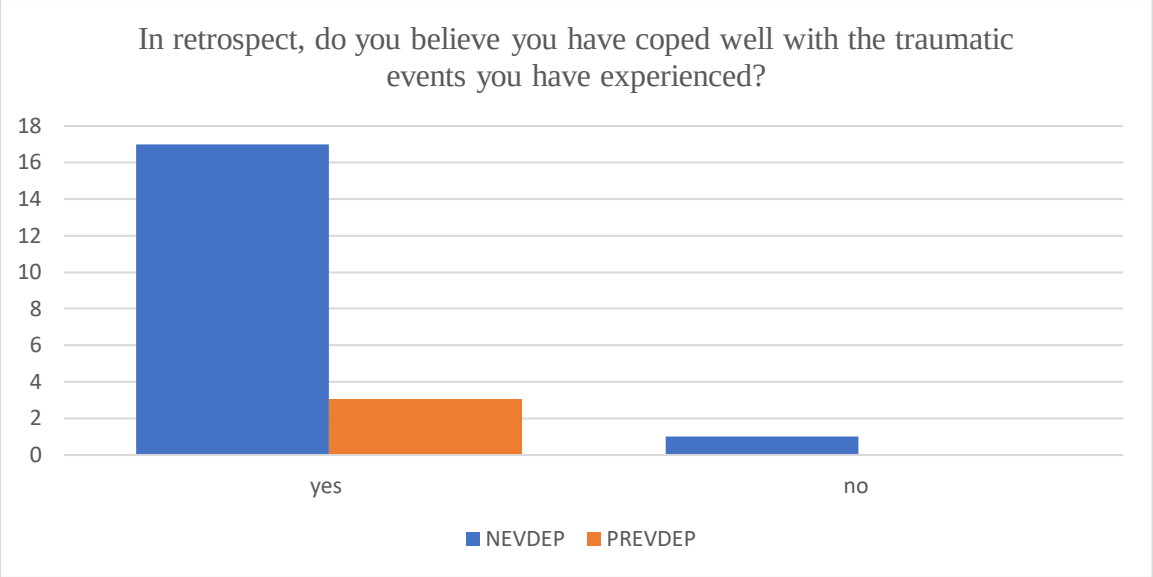
4.5 Hypothesis 2a

It was hypothesised that those that have considered themselves to have coped well from adversity are more likely to have higher levels of wisdom. Participants were asked, "In retrospect, do you believe you have coped well with the traumatic events you have experienced?" results were compared by group status (PREVDEP vs NEVDEP) and YES/NO responses to this question

A chi-square test of independence was performed to examine the relation between depression status and rating of personal coping following a difficult life event. The relation between these variables were significant, X^2 (2, N = 26) = 16.64, p = .002.

Figure 2

Graph to show significant difference between PREVDEP and NEVDEP having coped well from a traumatic event.



4.6 Hypothesis 2b

It was hypothesised that those that have considered themselves to have grown psychologically and emotionally from adversity are more likely to consider themselves to be wise compared to those that do not feel they have psychologically and emotionally grown from adversity.

Participants were asked, "Do you think it possible that you have psychologically or emotionally grown as a result of your previous experiences?" results were compared by group status (PREVDEP vs NEVDEP) and YES/NO responses to this question. A chi-square test of independence was performed to examine the relation between depression status and rating of emotional growth following adversity over lifetime. The relation between these variables was not significant, X^2 (2, N = 26) = 3.47, p = NS.

4.7 Hypothesis 2c

Participants were asked, "Do you consider yourself to be wise?" results were compared by group status (PREVDEP vs NEVDEP) and YES/NO responses to this question. A chi-square test of independence was performed to examine the relation between depression status and

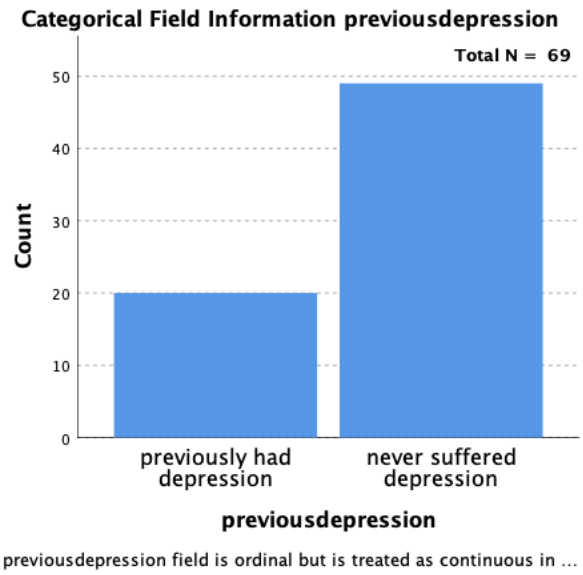
being wise. The relation between these variables was not significant X^2 (2, N = 21) = 1.42, p = NS.

4.8 Hypothesis 2d

Participants were asked "on a scale of 0-100 (0 being least agreement, 100 being strongest agreement) as a result of all your life experiences how much do you agree you are now more reflective, more forgiving of others and more accepting of the frailty of human intention" It was hypothesised that NEVDEP participants would have higher agreement scores than PREVDEP participants. A Wilcoxon signed rank test comparison was performed to examine the relation between depression status self-perceived levels of reflection, forgiveness and acceptance. The relation between these variables is significant (Z= 6.099, p = .000). Therefore, NEVDEP participants found themselves to be more reflective, forgiving and accepting following life experiences compared to PREVDEP participants. The scores are reflected in the graph below:

Figure 3

Graph to show significant relation between NEVDEP participants and PREVDEP participants to be more reflective, forgiving and accepting following life experiences.

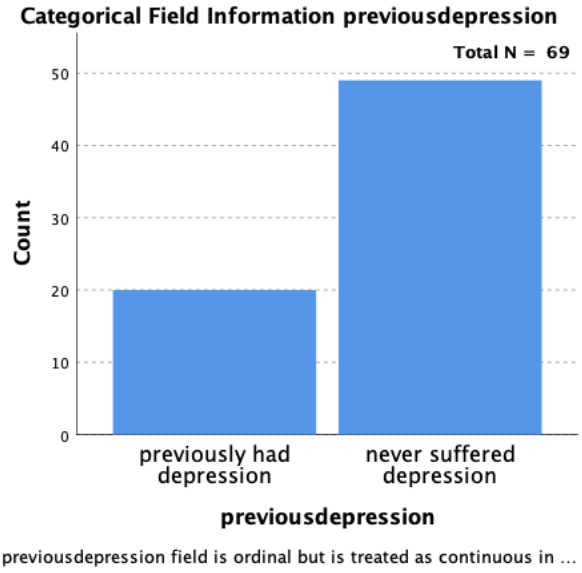


4.9 Hypothesis 2e

Participants were asked "on a scale of 1-10 (1 being least agreement, 10 being strongest agreement) how much do you agree that as a result of your life experiences, you are more concerned about the welfare of others and more able to recognise that at times and in crises recognise that one may need to tolerate uncertainty and regulate emotions as best as possible in order to get by?" It was hypothesised that NEVDEP participants would have higher agreement scores than PREVDEP participants. A Wilcoxon signed rank test comparison was performed to examine the relation between depressed status and the Likert scale question outlined above. The relation between these variables is significant ($Z = 6.100$, $p = .0005$). Therefore, in comparison to PREVDEP participants, NEVDEP participants found themselves to be more concerned about the welfare of others, tolerate uncertainty and regulate their emotions as a result of their life experiences. The results are reflected in the graph below:

Figure 4

Graph to show significant relation between NEVDEP and PREVDEP participants in relation to finding themselves more concerned with the welfare of others, tolerating uncertainty and regulate emotions as a result of their life experiences.



4.10 Hypothesis 3a

A correlation matrix was calculated to examine the significant predicting factors from the PTGI subscales against the BSAWS and the 3D-WS total and subscales. See the correlation matrix for the BSAWS below:

Table 3.2

Correlation matrix for PTGI subscales and BSAWS scores

Variable	*n*	*M*	*SD*	1	2	3	4	5	6
1. **PTGIAof Life**	46	10.36	4.02	-					

2. **PTGINewPoss**	46	13.95	7.35	.70**	-				
3. **PTGISpititual**	47	2.40	1.63	.62**	.74**	-			
4. **PTGIRelToOthers**	45	22.30	10.31	.72**	.83**	.66**	-		
5. **PTGIPersStrength**	47	13.95	5.44	.72**	.84**	.69**	.77**	-	
6. **BSAWS**	50	44.05	4.81	.32*	.46**	.27	.41**	.37*	-

* $p < .05$ ** $p < .001$

Based on the correlation matrix, it is hypothesised that the BSAWS scores will be predicted by the PTGI appreciation of life, new possibilities, relation to others and personal strength subscale scores. A stepwise multiple regression was used to test whether the identified subscales of PTGI will predict BSAWS scores. Entering the four variables as IV's (appreciation of life (β = .31), new possibilities (β = .23), relating to others (β =.15), personal strength (β = .30) and the BSAWS as the DV, a significant model emerged, F(4,39) = 2.759, p = .041, adjusted R2 = .221 to predict higher BSAWS scores.

5.0 Hypothesis 3b

A correlation matrix was completed to identify significant predictors for the 3D-WS full scale using the PTGI subscales. The matrix produced no significant correlations and so it was decided to explore whether the PTGI subscales could predict the 3D-WS subscale scores.

Table 3.3

Correlation matrix for PTGI subscales and BSAWS scores

Variable	***n***	***M***	***SD***	**1**	**2**	**3**	**4**	**5**	**6**

7. **PTGIAof Life**	46	10.36	4.02	-					
8. **PTGINewPoss**	46	13.95	7.35	.70**	-				
9. **PTGISpititual**	47	2.40	1.63	.74**	.62**	-			
10. **PTGIRelToOthers**	45	22.30	10.31	.83**	.66**	.72**	-		
11. **PTGIPersStrength**	47	13.95	5.44	.84**	.69**	.77**	.71**	-	
12. **3D-WS Total**	50	154.94	17.19	.10	.12	.03	.08	.17	-

* $p < .05$ ** $p < .001$

5.1 Hypothesis 3c

It is hypothesised that the 3D-WS cognitive subscale will be predicted by the PTGI subscale scores.

Table 3.4

Correlation matrix for PTGI subscales and BSAWS scores

Variable	***n***	***M***	***SD***	**1**	**2**	**3**	**4**	**5**	**6**
13. **PTGIAof Life**	46	10.36	4.02	-					
14. **PTGINewPoss**	46	13.95	7.35	.70**	-				
15. **PTGISpititual**	47	2.40	1.63	.61**	.62**	-			
16. **PTGIRelToOthers**	45	22.30	10.31	.72**	.66**	.72**	-		
17. **PTGIPersStrength**	47	13.95	5.44	.72**	.69**	.77**	.72**	-	

18. **3D-WS Cog**	50	47.06	8.29	.24	.20**	.03	.28**	.24*	-

* $p < .05$ ** $p < .001$

Entering the five PTGI variables as IV's and the 3D-WS cognitive domain as the DV, a significant model emerged, F(5,39) = 2.525, p = .045, adjusted R2 = .151 to predict higher 3D-WS scores.

5.2 Hypothesis 3d

It is hypothesised that the 3D-WS reflective subscale will be predicted by the PTGI subscale score.

Table 3.5

Correlation matrix for PTGI subscales and BSAWS scores

Variable	***n***	***M***	***SD***	**1**	**2**	**3**	**4**	**5**	**6**
19. **PTGIAof Life**	46	10.36	4.02	-					
20. **PTGINewPoss**	46	13.95	7.35	.70**	-				
21. **PTGISpititual**	47	2.40	1.63	.62**	.61**	-			
22. **PTGIRelToOthers**	45	22.30	10.31	.72**	.65**	.73**	-		
23. **PTGIPersStrength**	47	13.95	5.44	.72**	.69**	.77**	.72**	-	
24. **3D-WS Ref**	50	53.09	9.36	.10	.01**	.08	.04	.10	-

* $p < .05$ ** $p < .001$

Entering the five PTGI variables as IV's and the 3D-WS reflective domain as the DV, an insignificant model emerged, F(5,40) = .668, p = .650, adjusted R2 = .038. Therefore, the PTGI subscales do not predict 3D-WS reflective scores.

5.3 Hypothesis 3e

It is hypothesised that the 3D-WS affective subscale will be predicted by the PTGI subscale score.

Table 3.6

Correlation matrix for PTGI subscales and BSAWS scores

Variable	***n***	***M***	***SD***	**1**	**2**	**3**	**4**	**5**	**6**
25. **PTGIAof Life**	46	10.36	4.02	-					
26. **PTGINewPoss**	46	13.95	7.35	.70**	-				
27. **PTGISpititual**	47	2.40	1.63	.62**	.74**	-			
28. **PTGIRelToOthers**	45	22.30	10.31	.72**	.83**	.66**	-		
29. **PTGIPersStrength**	47	13.95	5.44	.72**	.84**	.69**	.77**	-	
30. **3D-WS Aff**	50	55.05	6.20	.13	.04	.09	.08	.13	-

* $p < .05$ ** $p < .001$

Entering the five PTGI variables as IV's and the 3D-WS reflective domain as the DV, an insignificant model emerged, $F(5,39) = .389$, $p = .853$, adjusted $R2 = .075$. Therefore, the PTGI subscales do not predict 3D-WS affective scores.

5.3.1 Summary of Hypothesis 3

In sum, the PTGI subscales, appreciation of life, new possibilities, relation to others and personal strength can significantly predict BSAWS scores. There was no significant correlation between the 3D-WS total and PTGI subscales, and so each PTGI subscale was regressed against each 3D-WS subscale. Results showed that each PTGI subscale significantly predicted 3D-WS cognitive scores but did not significantly predict 3D-WS reflective or affective scores.

6.0 Discussion

The current study examined whether depression has an effect on self-perceived wisdom using a clinical sample of those who have previously experienced depression and those who have not. Depression is a relapsing and remitting condition where it is more common than not that people who experience depression to have further episodes over a lifetime. Depression also impacts upon one's attention, executive functioning, memory and processing speed (Perini et al, 2019). It was therefore of interest in this current study about the impact of depression on self-assessed wisdom in older people. As previously established, wisdom is less an outcome of ageing and more a product of one's ability to reflect on adversity. Depression may be considered an experience of adversity that actively blocks the process of developing wisdom,

for example in the nature of autobiographical recall in depression (Sumner et al. 2010). Overall, it appears that depression can have a long-lasting impact on those that have previously been depressed which may impact one's ability to develop post traumatic growth and as a result effect whether one may perceive themselves as grown from adversity, which can be an important precursor for development of wisdom.

6.1 Hypothesis 1: depression and post traumatic growth

There was significant difference between the PREVDEP group and NEVDEP group in terms of depression and anxiety scores. This showed that the PREVDEP had higher depression and anxiety scores based on the PHQ-8 and the GAD-7. This therefore meant that there was a distinct difference between both groups.

When testing whether depression levels will impact perceived development of wisdom, results showed an insignificant relationship between PREVDEP and NEVDEP on both the BSAWS and the 3D-WS full scale. Not all results, however, were found to be insignificant. When breaking down the 3D-WS into their domains and investigating the sub-components of wisdom (cognitive, reflective and affective), results showed a significant result between PREVDEP and NEVDEP for the reflective and affective sub-components of the 3D-WS, therefore partially supported hypothesis one. When investigating the reflective and affective components of wisdom on the 3D-WS, it was found that those with a previous history of depress (PREVDEP) rated themselves as less reflective and affective than those who had never experienced depression and therefore had a more negative outlook on self-perceived wisdom. This result coincides with previous research that suggests that when one suffers depression, their ability to fully explore thoughts, feelings and believes surrounding an event

are hindered (Li et al, 2021). A person may therefore be less able to see themselves in a positive light following depression which may block a sense of positive development such as wisdom attainment. An important finding were the divergent ratings from the two groups and that % of the PREVDEP participants registered scores above cut-off on the GAD7 and PHQ8. This suggests that even if an individual is not currently depressed and rather has previously experienced depression, depression may still have lasting effects on one's outlook on life. This may in turn negatively impact on the potential for reflecting on adversity and for becoming wise.

An explanation as to why there may have been significant differences in the 3D-WS sub-components compared the 3D-WS total and BSAWS is the way in which wisdom is measured. The results support the current theoretical orientations that believe that wisdom is a multifaceted concept (Jeste & Lee, 2019) rather than previous understandings of which wisdom is viewed to be an indicator of intelligence (Baltes, 2019) or a solo personality trait (Webster, 2007). Debate, however, remains as to what components of wisdom are essential in predicting positive wellbeing and overall greater levels of overall wisdom. The current study suggests that the reflective and affective components of wisdom are valuable components of over-all wisdom. According to Ardelt (2003), the reflective component of wisdom is essential for facilitating the understanding of cognitions. It also assists the ability to acquire different perspectives, subjectivity and insight to one's own circumstances. The affective component, Ardelt (2003) based this on the presence of positive emotions and compassion towards other individuals. As highlighted, the current study has found that PREVDEP individuals' reflective and affective ability are more effected than NEVDEP individuals. Therefore, they are less likely to develop self-acceptance, self-compassion or tolerance to uncertainty and therefore less likely to view themselves as wise.

It is interesting that when examining the cognitive component of wisdom on the 3D-WS scale there was no significant difference between the groups, but perhaps this is not surprising. Depression is predominantly caused by stressors of a social nature (American Psychiatric Association, 2000) due to maladaptive, unhelpful beliefs and negative thought patterns (Beck, 1967). The cognitive component of wisdom, as explained by Ardelt (2003), includes the ability to understand a deeper meaning of life events. Those that have previously suffered with depression may have already had a negative or pessimistic understanding of a deeper meaning of their personal life events and therefore you would not expect to see an effect on the cognitive component of wisdom.

Hypothesis 1b showed no significant difference between PREVDEP and NEVDEP participants and scores of PTG. It was expected that participants in the NEVDEP group would score higher on the PTGI scale than PREVDEP. When looking at previous research, literature has so far focused on how current depression may affect one's ability to develop PTG. Current research in PTG has focused on the relationship between PTG and post-traumatic stress disorder following adversity (Li et al, 2021). Research appears to be split in terms of higher levels of post-traumatic stress being both a positive and negative indicator on post traumatic growth (Strasshofer et al, 2018; Arpawong et al, 2016). To date, there appears to only be one study that has explored the relationship between depression, anxiety and post traumatic growth (Eisma et al, 2019). It was found that moderate symptoms of depression and anxiety were associated with higher levels of growth than either low or high symptoms of depression and anxiety (Eisma et al, 2019). In relation to the current study, all participants had previously experienced depression and so the study was unable to control for whether a

participant was low, moderate or highly depressed. This may explain a lack of difference between the two groups and post traumatic growth given that previous research has highlighted those that are moderately depressed are more likely to experience higher levels of growth. A further explanation for a lack of difference is the under powered sample size in the previously been depressed group. Given that there were half as many in the previously been depressed group compared to the never been depressed group, it is difficult to draw conclusions about the levels of severity of depression in order for post traumatic growth to develop. Future research may benefit from exploring current depressed versus previous depressed participants and levels of PTG, whilst also considering heterogeneity of symptom severity.

6.2 Hypothesis 2: Use of timeline

Hypothesis 2a found higher levels of wisdom amongst those that felt they had coped well from adversity. However, 2b found an insignificant result between psychological and emotional growth and levels of wisdom. Hypothesis 2a would support literature from Gluck & Bluck (2013) who developed the MORE life experience model to explain why some individuals may develop wisdom more than others. Their model suggests that when an individual utilises resources such as mastery, openness, reflexivity and emotion regulation, they are more likely able to manage and cope with adversity and therefore display higher levels of wisdom. Hypothesis 2b is surprising that similar results were not found. However, due to the length of the survey, there were different numbers compared to those that answered hypothesis 2a and therefore this may have skewed results. This may also explain the insignificant result from 2c whereby no differences were found between PREVDEP and

NEVDEP when asked “do you consider yourself to be wise?” Previous and ancient research on wisdom would suggest that one is wise if he/she believes they are not wise (Sharon, 1996). Therefore, hypothesis 2b may be explained by individuals did not link psychological or emotional growth with wisdom.

Hypothesis 2d found that NEVDEP participants rated themselves higher than PREVDEP participants in terms of being more reflective, forgiving and accepting as a result of life experiences. Likewise, hypothesis 2e found that NEVDEP participants rated themselves higher than PREVDEP participants in having higher levels of welfare of others, tolerance of uncertainty and ability to regulate their emotions as a result of their life experiences. These results can be related to the results from hypothesis 1a. Participants who have previously been depressed are unable to reflect positively about themselves or credit themselves with positive affect and therefore, relating to Gluck & Bluck’s (2013) MORE life experience model, those that are PREVDEP are less likely to utilise the resources such as reflectiveness, openness, emotional regulation or mastery in order to develop resources such as forgiveness, acceptance of uncertainty and welfare of others. This solidifies the findings that those that are PREVDEP are less likely to develop PTG and therefore are unlikely to consider themselves to be wise.

6.3 Hypothesis 3: Predictors of wisdom

Hypothesis 3 aimed to establish whether PTGI sub-scales could predict wisdom scores in the BSAWS, the 3D-WS and the 3D-WS sub-components. PTGI sub-scales appreciation of life, new possibilities, relation to others and personal strength positively predicted BSAWS scores. This was to be expected as the BSAWS as a measuring tool, is commonly used to explore the relationship between wisdom and psychosocial outcomes (Taylor, Bates & Webster, 2011). Previous research that has used the BSAWS identified a positive relationship between wisdom and wellbeing (Webster, Bohlmeijer & Westerhof, 2014). Furthermore, the BSAWS was found to be positively related to psycho-social values, personal well-being, forgiveness, generativity and ego integrity (Webster, 2010). When referring to 'critical life experience' on the BSAWS, the person is able to refer to personal experiences. It encourages one to reminisce and relate to the present which may have encouraged participants to reflect more so on their post traumatic growth. Therefore, it appears that the BSAWS is a fitting tool to allow participants to think about their past experiences and reflect on their period of growth in order to make a more informed decision as to whether they perceive themselves to be wise.

In contrast, the PTGI subs-scales did not predict 3D-WS total scores. However, when looking at the domains of the 3D-WS. The PTGI sub-scales positively predicted the 3D-WS cognitive scores but showed insignificant for both the 3D-WS reflective and affective domain. This result is interesting considering there was no significant differences between PREVDEP and NEVDEP participants on the cognitive domain in hypothesis 1a. Previous research has found that Ardelt's (2003) 3D-WS is positively related to mastery, purpose in life and forgiveness. However, it is negatively related to depression, fear of death or avoidance of death and economic pressure (Ardelt, 2011). Whilst this outcome may have been unexpected, if previous wisdom found that the 3D-WS is negatively related to depression, this may explain

why the reflective and affective components of the 3D-WS could not be positively predicted by PTGI scores. This result further encourages one to look at developing a universal measuring tool for wisdom.

6.4 Strengths and Limitations of this current research

The study has a number of positive attributes amongst these are that it is one of the first studies to investigate depression and wisdom. The study itself is innovative in that it uses both standardised psychometric measures of wisdom and Likert scales which provide a more detailed measure of individual perception. Combining both sets of data and examining depression status as a way of examining potential impact on wisdom provides an intriguing way to approach such a multilevel psychological construct as wisdom. It furthermore supports the current work of wisdom defining researchers such as Jeste & Lee (2019) who believe that wisdom is a nuanced framework that is able to incorporate flexibility, compassion, reason and pragmatics (Jeste & Lee, 2019).

Despite initially proposing face to face interviews with participants. COVID-19 meant that face to face contact with participants was not possible. Prior to conducting this study, evidence was sought on older adult internet use. It was found that older people are likely to use the internet for health-related issues (Choi & DiNitto, 2013), and as such this provided a rationale to support adopting an online approach to recruitment. This adds both a strength and a potential weakness to the current study. A strength is that online recruitment proved successful in recruiting older people and indeed may also have increased participant numbers due to it being more accessible and within the control of the participant.-A potential limitation

is of course that online methods may have recruited a subset of younger-older people who may be more tech savvy and as such caution regarding generalisation of results is advised. A further strength is that When looking at the original source data from both the 3D-WS and the BSAWS, the data is consistent with the normative scores produced for this measure

There are limitations of the current study that must be considered in order to ensure lessons can be learnt for future empirical studies on wisdom. Despite having limited control over being able to study currently depressed participants. It is important to note that, due to participants having previously experienced depression, may have limited the recruitment numbers. Older people may not have perceived themselves to have been depressed or willing to state that they have previously been depressed which may account for the imbalance of those that stated they had never been depressed compared to those that stated that they had been depressed (Nair et al,2020).

When looking at the sample, although the sample was relatively small it had a significant difference in both groups. This may cause both internal and external validity to be challenged. It is also noteworthy to acknowledge the use of community sampling and the way in which external factors that one cannot control may influence variables under test conditions with such a small sample. Using a survey could reflect possible response bias due to social desirability and demand characteristics (Barker, 2013). When investigating older adults and mental health, it can be difficult to, without acknowledging their beliefs and understanding as evidence suggests that a large amount of older adults mistake depression for natural signs of aging (Beadle & De La Vega, 2019). It would be useful to consider face-to-

face interviews and incorporate older adults perceptions of depression to acknowledge their generations definition of mental health.

6.5 Clinical relevance

Overall, the current empirical study hopes that it has advanced knowledge and contributed not only to the research field of wisdom, but towards clinical psychology. Predominantly, research on wisdom has centred itself around exploring definitions of wisdom and how wisdom links with old age. Due to the concept of wisdom becoming more scientific, not only is there evidence to determine whether it is possible to empirically measure wisdom and investigate the psychometric properties of standardised wisdom measures. But evidence presented here suggests that common mental health conditions such as depression may block an individual on the development of wisdom.

To the knowledge of the research team, as highlighted above. The current research is the only piece of research that has aimed to target the proposed question with a depressed population. Whilst results from this study may have some clinical relevance, there is a sense of sadness of what has been found. Results explain how depression might block individuals from being able to navigate their way of preparing what is to come during their later stages of life. However, this has powerful relevance to clinicians in terms of how they use wisdom enhancement as part of developing robust interventions used for depression. This may include utilising and encouraging clinicians to use tools such as The CBT timeline more regularly when seeing a depressed service user. The timeline can aid a clinician to establish a better idea of how a client perceives themselves to be wise. It could also be used as a tool to

help service users identify where they feel they did not grow following their adverse experiences. Such information is powerful for a clinician in order to incorporate ways to help service users develop techniques to developing wisdom This will have significant clinical effects by acknowledging how wisdom can be understood from an earlier age and not just in older adults. It will also alert clinicians to the under-estimated tool that is wisdom and the use of standardised wisdom measures in order to ensure clinicians link self-perceived levels of wisdom to one's wellbeing, particularly when aiding successful ageing and after enduring a challenging/ traumatic event. The current research further encourages one to continue to look at a universally, consistent measure of wisdom and to look at wisdom from an earlier age.

7.0 Conclusion

This study is one of the first studies to investigate wisdom alongside a mental health condition. It contributes to the empirical evidence of wisdom to continue to strengthen its scientific credentials. Furthermore, it suggests that depression may influence components of wisdom. It also highlights the potential relevance of post traumatic growth for an individual to increase their likelihood to develop wisdom. Finally, this study importantly highlights the need for further research to be conducted around how wisdom is measured related to participants with common mental health conditions.

8.0 References

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9.0 Appendices

Appendix A: Participant information sheet.

Participant Information Sheet

Title of Project: Sadder and wiser? Impact of depressive disorder on self-perceived wisdom in later life

Researcher: Clare Jones

My name is Clare Jones and I am conducting a research project exploring the effects depression has on self-perceived wisdom in later life.

I would like to invite you to participate in this research project. Before agreeing to participate, I would like to fully explain why the research is being done and what is involved in participating. Please take a moment to read the following information. Should you have any further questions or require any further information, please do not hesitate to contact me using the details below.

What is the purpose of the study?

The study is being conducted as part of a doctorate in Clinical Psychology.

Wisdom is fast becoming an exciting phenomenon within the biopsychosocial field. The Development of wisdom it is said can be helpful when overcoming adverse experiences, it is also a construct that appears to be beneficial during the process of ageing. Whilst it has always been a popular topic to study within philosophical, religious and historic fields. Our knowledge on Wisdom in mental health is limited. Depression is a very common mental health problem and between 2 and 15% of people are likely to experience depression within their lifetime (Moussavi, Chatterii, Verdes, Tandon, Patel & Ustun, 2007). The study will aim to explore the effects depression can have on self-perceived wisdom.

It is hoped that the study will add to the growing empirical literature within wisdom and also contribute significantly to the clinical field to understand wisdom in order to treat depression. The

study aims to look at the experiences of people in their lives and investigate whether they perceive themselves as wise. The study will compare the answers of those who are depressed and those who are not depressed.

Do I have to take?

It is your choice to take part. If you decide to take part, after reading this information sheet you will be asked to tick a box below that signals that you have given your consent to continue. You can withdraw from the study at any time without having to give a reason. Should you wish to withdraw, your personal details will be deleted within a month of you withdrawing.

What happens if I take part?

The study requires between 1hour to 1.5 hours of your time. You will be asked to complete an online questionnaire split into four sections. The first section will assess your mood and anxiety using a depression and anxiety scale. The second section will aim to assess positive outcomes following a traumatic event. There will be two wisdom scales used in section three one that will concentrate on three important components of wisdom, cognitive, reflective and affective and secondly, exploring to what extent one agrees with a list of statements based on personal experience. Section four will consist of a timeline that will ask you to reflect on events that have been difficult for you. You will be asked whether you feel you overcome these difficulties and as a result grew in wisdom.

If you choose to take part, you can do this questionnaire in your own time and in an environment of your choice.

Once the questionnaire has been completed, you will be guided onto a debrief page and then you are able to close the study.

What are the benefits of you taking part?

Whilst there are no specific personal benefits from taking part in the study. It is a really exciting opportunity to contribute to the significant lack of literature about the effects of depression on

wisdom. At the end of the research, you will have the opportunity to request a copy of the final outcomes of the research.

What are the disadvantages/risks to taking part?

The study involved completing mood/ anxiety scales which may have an impact on your mood temporarily. It also asks you to reflect on events that have happened in your life which might feel uncomfortable or painful to think about. If the questions feel too much to answer and you want to withdraw, you are able to do so. You will have a month before your data is deleted. Should you change your mind within this month and would like to complete the survey, you are able to do so.

Will this study be confidential?

All personal information you disclose will be kept confidential to the research team within the University of Exeter. In order to disguise your identity, you will be coded so that you are unable to be identified.

Confidentiality will only be broken in exceptional circumstances, for example if there were any indication that you or someone else was at risk of being hurt and/or harmed. If this were the case, it would be necessary for me to share this with my project supervisor, who may wish to contact you, your GP or another professional in your care. However, as much as we can, this will be in discussion with you.

What will happen to the results of the study?

The results will be used to inform a thesis dissertation as part of a Doctorate in Clinical Psychology. |Trainee's aim to publish their results in a peer-reviewed journal. Participants will be given the opportunity to to request a copy of the results. All identifiable information will be removed should the paper be published. Data will be securely stored on a university approved device with secure passwords that only the research team will have access to. Personal details will be stored separately from other study data. Data will be destroyed within 5 years in keeping with good practice.

Who is the research organised by?

The research is being sponsored by the University of Exeter. No additional funding has been obtained for this research.

Who has reviewed the study?

This research will be reviewed by the University of Exeter's School of Psychology Ethics Review Panel.

All NHS research is looked at by an independent group and will be receiwed by their Research Ethics Committee.

Contact details

Should you have any further questions, please do not hesitate to email me, caj220@exeter.ac.uk.

Clare Jones

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Appendix B: Participant consent form.

CONSENT FORM

Title of Project: Sadder and wiser? Impact of depressive disorder on self-perceived wisdom in later life

Name of Researcher: Clare Jones

1. I confirm that I have read the information sheet dated..... for the above project. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without my legal rights being affected. ☐

3. I understand that relevant sections of the data collected during the study, may be looked at by members of the research team and individuals from the University of Exeter, where it is relevant to my taking part in this research. ☐

   I give permission for these individuals to have access to my records.

4. I understand that taking part involves anonymised questionnaires to be used for the purposes of the study ☐

   I understand information will be shared with other researchers for use in future research projects ☐

   I understand that the study may be published in an academic publication ☐

   I understand results of the study may be used for teaching or training materials for use in Universities ☐

   I agree that my contact details can be kept securely and used by researchers ☐

   from the research team to contact me about future research projects ☐

5. I agree to take part in the above project. ☐

Name of Participant	Date	Signature
Name of researcher taking consent	Date	Signature

Appendix C: Participant Debrief Sheet.

Debrief form

Thank you for taking part and completing the survey. The rationale of the study is to improve the understanding and the impact that wisdom can have on an individual. Specifically in a clinical context, by understanding one's perception of wisdom can have positive implications for a way in which a clinician may work with that individual during intervention. All participants will be invited to receive a copy of the results of the study. If you wish to know further details, the researcher invites you to contact them. The results will be shared with the Univeristy of Exeter's Lived Experience group as part of the service-user consultation process. It is hoped that the study will be published in peer-reviewed journals. Should you wish to receive a copy, please do contact the researcher. Many thanks again for your contribution to the study.

Should you wish to raise any governance issues, please do contact Gail Seymour (University Ethics and Governance Manager) g.m.seymour@ex.ac.uk.

If the study has caused any psychological distress, please view the following sign posting options you may wish to contact.

https://www.nhs.uk/conditions/stress-anxiety-depression/mental-health-helplines/

https://www.time-to-change.org.uk/mental-health-and-stigma/help-and-support

https://www.samaritans.org

https://www.mind.org.uk/information-support/helplines/

Appendix D. The PHQ-8

1. Over the *last 2 weeks*, how often have you been bothered by any of the following problems?

a. Little interest or pleasure in doing things

b. Feeling down, depressed, or hopeless

c. Trouble falling/staying asleep, sleeping too much

d. Feeling tired or having little energy

e. Poor appetite or overeating

f. Feeling bad about yourself or that you are a failure or have let yourself or your family down

g. Trouble concentrating on things, such as reading the newspaper or watching television.

h. Moving or speaking so slowly that other people could have noticed. Or the opposite; being so fidgety or restless that you have been moving around a lot more than usual.

Appendix E. The GAS

Geriatric Anxiety Scale
Long Term Care Version (GAS-LTC) © Daniel L. Segal, Ph.D., 2015

Below is a list of common symptoms of anxiety or stress. Please read each item in the list carefully. Indicate whether or not you have experienced each symptom during the PAST WEEK, INCLUDING TODAY by checking under the corresponding answer, either YES or NO.

Yes (1) No (0)

1. I was irritable or grumpy.

2. I felt detached or isolated from others.

3. I felt like I was in a daze or foggy-headed.

4. I had a hard time sitting still.

5. I could not control my worry.

6. I felt restless, keyed up, or on edge.

7. I felt overly tired.

8. My muscles were tense or tight.

9. I felt like I had no control over my life.

10. I felt like something terrible was going to happen to me.

Appendix F: The PTGI

Client Name: Today's Date:

Indicate for each of the statements below the degree to which this change occurred in your life as a result of the crisis/disaster, using the following scale.

0 = I did not experience this change as a result of my crisis.
1 = I experienced this change to a very small degree as a result of my crisis. 2 = I experienced this change to a small degree as a result of my crisis.
3 = I experienced this change to a moderate degree as a result of my crisis. 4 = I experienced this change to a great degree as a result of my crisis.
5 = I experienced this change to a very great degree as a result of my crisis.

Possible Areas of Growth and Change	0	1	2	3	4	5
1. I changed my priorities about what is important in life.						
2. I have a greater appreciation for the value of my own life.						
3. I developed new interests.						
4. I have a greater feeling of self-reliance.						
5. I have a better understanding of spiritual matters.						
6. I more clearly see that I can count on people in times of trouble.						
7. I established a new path for my life.						
8. I have a greater sense of closeness with others.						
9. I am more willing to express my emotions.						
10. I know better that I can handle difficulties.						
11. I am able to do better things with my life.						
12. I am better able to accept the way things work out.						
13.I can better appreciate each day.						
14.New opportunities are available which wouldn't have been otherwise.						
15.I have more compassion for others.						
16. I put more effort into my relationships.						
17. I am more likely to try to change things which need changing.						
18.I have a stronger religious faith.						
19. I discovered that I'm stronger than I thought I was.						
20. I learned a great deal about how wonderful people are.						
21.I better accept needing others.						

Appendix G: The 3D-WS

The Three Dimensional Wisdom Scale

Cognitive Dimension of the 3D-WS

Item Wording

How strongly do you agree or disagree with the following statements? (1 = strongly agree *to 5 =* strongly disagree*)*

Ignorance is bliss

It is better not to know too much about things that cannot be changed

In this complicated world of ours, the only way we can know what's going on is to rely on leaders or experts who can be trusted

There is only one right way to do anything
A person either knows the answer to a question or he/she

doesn't
You can classify almost all people as either honest or

crooked
People are either good or bad
Life is basically the same most of the time

How much are the following statements true of yourself? (1 = definitely true of myself *to 5 =* not true of myself*)*

A problem has little attraction for me if I don't think it has a solution

I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something

I prefer just to let things happen rather than try to under- stand why they turned out that way

Simply knowing the answer rather than understanding the reasons for the answer to a problem is fine with me

I am hesitant about making important decisions after think- ing about them

I often do not understand people's behavior

Reflective Dimension of the 3D-WS

Item Wording

How strongly do you agree or disagree with the following statements? (1 = strongly agree *to 5 =* strongly disagree*)*

Things often go wrong for me by no fault of my own[a]

I would feel much better if my present cir- cumstances changed

How much are the following statements true of yourself? (1 = definitely true of myself *to 5 =* not true of myself*)*

I try to look at everybody's side of a dis- agreement before I make a decision (reversed)

When I'm upset at someone, I usually try to "put myself in his or her shoes" for a while (reversed)

I always try to look at all sides of a problem[a] (reversed)

Before criticizing somebody, I try to imag- ine how I would feel if I were in their place (reversed)

I sometimes find it difficult to see things from another person's point of view[a] When I am confused by a problem, one of

the first things I do is survey the situa- tion and consider all the relevant pieces of information (reversed)

Sometimes I get so charged up emotionally that I am unable to consider many ways of dealing with my problems

When I look back on what has happened to me, I can't help feeling resentful

When I look back on what's happened to me, I feel cheated

I either get very angry or depressed if things go wrong

Affective Dimension of the 3D-WS

Item Wording

How strongly do you agree or disagree with the following statements? (1 = strongly agree *to 5* = strongly disagree*)*

I am annoyed by unhappy people who just feel sorry for themselves

People make too much of the feelings and sensitivity of animals

There are some people I know I would never like[a]

I can be comfortable with all kinds of people (reversed)

It's not really my problem if others are in trouble and need help

How much are the following statements true of yourself? (1 = definitely true of myself *to 5* = not true of myself*)*

Sometimes I don't feel very sorry for other people when they are having problems

Sometimes I feel a real compassion for everyone[a] (reversed)

I often have not comforted another when he or she needed it[a]

I don't like to get involved in listening to another person's troubles

There are certain people whom I dislike so much that I am inwardly pleased when they are caught and punished for something they have done

Sometimes when people are talking to me, I find myself wishing that they would leave

I'm easily irritated by people who argue with me

If I see people in need, I try to help them one way or another (reversed)

Appendix H: The BSAWS

The Brief Self Assessed Wisdom Scale

1 = Strongly disagree
2 = Moderately disagree 3 = Slightly disagree
4 = Slightly agree
5 = Moderately agree
6 = Strongly agree

I have taken important decisions throughout my life.	1	2	3	4	5	6
Reviewing my past helps me to have a good perspective of my current concerns.	1	2	3	4	5	6
I can easily express my emotions without feeling like I am losing control of the situation.	1	2	3	4	5	6
I often recall the past to see if I have changed since then.	1	2	3	4	5	6
I am good at identifying subtle emotions in myself.	1	2	3	4	5	6
I often use humour to put other people at ease.	1	2	3	4	5	6
Now I know I can truly appreciate the little things in life.	1	2	3	4	5	6
I have learnt valuable life lessons with others.	1	2	3	4	5	6
I wonder many times about the mysteries of life and what lies beyond death.	1	2	3	4	5	6