Mental health literacy for autism spectrum disorder and depression.

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Abstract

In this study, three hundred and sixty-eight participants answered a questionnaire consisting of three vignettes describing a person with depression, severe Autism Spectrum Disorder (ASD), and high-functioning Autism Spectrum Disorder (AS). Each vignette was followed by thirteen questions concerning the participant's knowledge about diagnosis, treatment, and prognosis. Participants demonstrated good mental health literacy (MHL) for depression, but were poor at diagnosing ASD. Drug therapy was rated as the least effective treatment and 'talking to a family member of friend' was rated as the most effective for each disorder. The highest prognosis ratings were given to depression, and the lowest given to ASD. Participants demonstrated better MHL than expected, possibly due to the availability of information on the Internet and the increase in prevalence of mental illnesses such as depression and ASD among the general population.

1. Introduction

The term 'mental health literacy' (MHL) was first coined by Jorm et al.1997(a) who defined it as the "knowledge and beliefs about mental disorders that aid the recognition, management or prevention of these disorders" (p. 182). There are probably now well over five hundred papers that fall into this field. The idea has been so popular that there are now papers titled by very specific "literacies" like dementia literacy and schizophrenia literacy meaning knowledge of a specific disorders (Furnham & Swami, 2018). It is argued that the conceptual models that lay individuals use to understand and explain mental health illnesses help shape their help-seeking behaviours for the very specific psychiatric symptoms. In addition, such conceptual mental models are also believed to influence choice of treatment, compliance with treatment, and the stigmatising of individuals suffering from mental health disorders (Jorm, 2012, 2015).

The extensive literature suggests that the general public to have a poor understanding of mental health, which has impeded them seeking and getting treatment. Data also suggests that the general public typically favours psychosocial explanations over biological explanations in relation to the onset of a range of mental health disorders. Further, people tend to emphasise stressful circumstances in a person's life as the most likely cause of a range of mental health disorders (Jorm, 2015; Furnham & Swami, 2018).

The two mental disorders most investigated have been depression and schizophrenia. People tend show a greater recognition of depression than of schizophrenia with around 70-80% recognising depression and 20-30% schizophrenia, irrespective of the nature of the participants (male/female; urban/rural; age, country of study) (Sai & Furnham, 2013). Indeed, this is why many studies looking at MHL literacy in a particular disorder tend to include MHL depression as a "control group".

This study compares the mental health literacy for Autism Spectrum Disorder (ASD), and high-functioning Autism Spectrum Disorder (AS) to that of depression because it is suggested that individuals will show a better understanding of depression than ASD. Very little work has been done in this area (Furnham & Buck, 2003). It is known that ASD is less common than depression and often misunderstood, which can allow distorted beliefs to develop (Huws & Jones, 2010). One example is the theory that ASD is caused by Thimerosal some childhood vaccines. However, irrefutable scientific evidence has found no link between Thimerosal and autism, and indeed, the number of cases of autism has actually increased since Thimerosal was removed from childhood vaccinations in 1999 (Smith, 2011).

This study aimed to examine lay peoples' ability to recognise the above disorders, accurately label them, recommend the appropriate treatments, and estimate the prognosis for the individual with the disorder in terms of symptoms, ability to form relationships and maintain a job. It was predicted that participants would show (H1) greater understanding of the diagnosis, treatment, and prognosis of depression, compared to ASD and AS. It was also predicted that (H2) more participants would identify severe ASD and depression as psychological disorders, but fewer would recognise the symptoms of high-functioning AS. In addition, it was predicted that (H3) women would show greater MHL (problem recognition and understanding) than men, as shown in previous research (Furnham et al., 2011; Wang et al., 2007). It was also predicted there would be an (H4) effect of age on prognosis and treatment suggestions, with younger participants demonstrating better MHL (recommending professional treatment) than older participants, and younger participants more likely to endorse professional treatment (Farre et al., 2008; Fisher & Goldney, 2003).

2. **Method**

2.1 Participants

Three hundred and sixty-eight participants aged 18-73 years (M= 42 years, SD= 15.3 years) were included in the analysis (181 males and 187 females). All participants were volunteers from the UK, recruited through opportunity sampling using various online methods, including social media, and the network *Fulcrum*. The majority of the participants (57.6%) were paid employees, 12.2% were students, 12.5% were retired, and 17.4% were unemployed. Within the sample, 33.7% of participants said they had been diagnosed with some depression, 1.4% with ASD. 32.3% subjects claimed to have a family member or friend who had been diagnosed with depression, 25.3% with ASD. The majority of participants reported their ethnicity as 'white' (87.2%), 4.3% as 'black/black British' and 6.5% as 'Asian/Asian British'.

2.2 Materials

Three different case vignettes were used in this research (examples of which can be found in Appendix A). One vignette described an individual with symptoms typical of one of depression, the remaining two described individuals with differing severity of ASD: severe ASD and high-functioning AS. Each vignette included at least three most common and distinctive general symptoms necessary to be diagnosed with one of the three disorders, and were based on an example vignette with the classical features of depression found in Jorm et al. (1997a). This number should be sufficient for diagnosis. The order of presentation of each vignette was randomised.

  The gender and socio-economic status of the individual in each vignette was randomised as the results of this research depended on the quality of the vignettes, and factors such as age, gender, or income could have an effect on the participants' impression of the disorder. Firstly, participants were required to indicate if the individual in the vignette had a psychological disorder ('yes'/'no'). If participants responded 'yes' to the first question they were then asked

to state what disorder they believed the individual to have (See Appendix B). Next, they were asked if they would recommend some form of treatment, and required to rate the potential effectiveness of five different treatments on a seven-point scale, where one indicated 'not effective' and seven indicated 'very effective'. This was to determine whether subjects thought treatment was necessary and also whether this should be mainly psychological (i.e., CBT), biological (i.e., drugs), or more to do with lifestyle choices (i.e., exercise, meditation, or talking to a family member or friend). Participants were then asked questions regarding the prognosis of the individual in the vignette including, 'will their symptoms get better', 'do they have the potential to get a job?', 'do they have the potential to live alone?', and 'do they have the potential to develop close personal relationships?'. These four questions were each rated on a five-point scale ranging from 'very unlikely' to 'very likely'. The penultimate question required a rating of the happiness of the individuals in the vignettes, which involved a seven-point scale ranging from 'very unhappy' to 'very happy'

Insert Appendix A and B here

2.3 Procedure

Ethics committee permission was sought and received. Participants completed the entire experiment online. It took them approximately ten to fifteen minutes. All participants were required to give their consent and assured of their anonymity.

3. Results

The data was analysed in three separate stages: diagnosis, treatment, and prognosis

3.1 Diagnosis

Table 1 shows the frequencies of responses to the presence of a psychological disorder question. It can be seen that the majority of participants responded 'yes' for ASD vignette,

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closely followed by the depression vignette. However, less than half recognised the presence of a psychological disorder in the AS vignette.

Insert Table 1 here

Cochran's Q analysis revealed a significant difference between whether or not participants recognised the presence of a psychological disorder in the three case vignettes, $Q(2, N = 368) = 313.46, p < .001$. Additional analysis using the McNemar test showed that participants recognised a disorder in the ASD vignette significantly more often than in depression and AS vignettes, $\chi^2(1, N = 368) = 16.18, p < .001$ and $\chi^2(1, N = 368) = 210.52, p < .001$ respectively. Participants also recognised a disorder significantly more often in the depression vignette than in the AS vignette, $\chi^2(1, N = 368) = 156.01, p < .001$. These results confirm the hypothesis that autism ASD would be recognised as a disorder the least often. However, the possibility that depression would be recognised as a mental health disorder the most often was not confirmed.

Participants who responded 'yes' to the previous question were asked to state the psychological disorder the individual may have. Of the participants who recognised the presence of a disorder in the Autism vignette (ASD), a content analysis of responses showed that 47.2% used the word 'autism' or 'autistic', 5.14% incorrectly used the word 'Asperger's', and 1.21% mentioned 'Autism Spectrum Disorder'. Of the participants who recognised the presence of a disorder in the Asperger's vignette, 22.0% used the words 'autism/autistic', only 16.0% identified the disorder as 'Asperger's syndrome', and only 2 participants (2.0%) stated the individual had some form of ASD. 76.6% of participants recognised the presence of a disorder in the depression vignette. The content analysis revealed that 79.1% of these participants used the words 'depression' or 'depressed' to describe the individual. A small proportion of participants (3.07%) wrongly described the individual as having some form of anxiety, and a further 3.07% wrongly focussed on the

weight gain described and suggested the presence of some form of eating disorder. A summary table of the content analysis can be found in Appendix B.

3.2 Treatment

The frequency of answers to the treatment question for each disorder are displayed in **Table 2**. Most participants recommended treatment for autism, a very similar number responded 'yes' for depression, whereas less than half responded 'yes' for Asperger's. Cochran's Q analysis for this question was significant, $Q(2, N = 368) = 295.43, p < .001$. Further analysis using McNemar tests showed significantly more participants recommended treatment for Autism than for Asperger's, $\chi^2(1, N = 368) = 180.82, p < .001$. Similarly, significantly more participants recommended treatment for depression than for Asperger's, $\chi^2(1, N = 368) = 160.59, p < .001$. There was no significant difference between whether or not participants recommended treatment for autism or depression, $\chi^2(1, N = 369) = 1.73, p = .189$.

Insert table 2 here

3.2.1 Treatment drug therapy

Table 2a displays the results for the perceived effectiveness of drug therapy for each disorder.. It was found that there was a highly significant difference between the vignettes, with respect to participant effectiveness ratings, $F(1.90, 688.24) = 123.38, p < .001, \eta_p^2 = 25.4\%$. There was also a significant interaction between effectiveness ratings and gender, $F(1.90, 688.24) = 6.24, p = .002, \eta_p^2 = 1.7\%$. indicating that drug therapy was thought to be more effective on females Bonferroni-corrected post hoc analyses showed the mean score of effectiveness given to drug therapy as a potential treatment was significantly higher for ASD compared to AS ($p <. 001$), mean effectiveness was significantly higher for depression compared to both the AS ($p < .001$), and ASD ($p < .001$). There was no significant effect of vignette character age or gender, $F < 1$ and $F(1, 362) = 1.78, p = .183$ respectively.

3.2.2 Treatment psychological therapy

Table 2b shows participant effectiveness ratings of psychological therapy as a possible treatment were highest doe autism, closely followed by depression. Participants thought psychological therapy would be least effective as a possible treatment for Asperger's Syndrome. A 3x2 repeated measures ANOVA found a highly significant difference, $F(2, 234) = 113.93$, $p < .001$, $\eta_p^2 = 23.9\%$. The was a significant interaction between participant ratings and gender, $F(2, 724) = 5.09$, p = .006, $\eta_p^2 = 1.4\%$. noting that it was better for males compared to females and younger more than older people. There was a significant interaction between participant ratings and vignette character age, $F(4, 724) = 3.72$, $p = .005$, $\eta_p^2 = 2.0\%$. Bonferroni-corrected post hoc analyses showed significantly higher ratings of effectiveness for autism ASM compared to the AS ($p < .001$), and significantly lower ratings of effectiveness for AS compared to depression ($p < .001$). There was no significant difference between ratings for autism and depression ($p > .05$)

3.2.3 Treatment exercise

It can be seen from **Table 2c** that participants rated exercise as an effective treatment for depression, where as the effectiveness scores for Asperger's Syndrome and autism were much lower. A 3x2 repeated measures ANOVA found a highly significant difference between effectiveness ratings, $F(2, 724) = 167.72$ $p < .001$, $\eta_p^2 = 31.7\%$. There was no significant effect of vignette character age or gender and no significant interactions were found ($F < 1$). Bonferroni-corrected post-hoc analyses showed significantly higher effectiveness ratings in the depression condition compared to both the autism condition ($p < .001$) and the Asperger's condition ($p < .001$). There was no significant difference between effectiveness ratings of exercise as a possible treatment for autism and Asperger's syndrome ($p > .05$).

3.2.4 Treatment meditation

Table 2d displays the means and standard deviations of participant effectiveness ratings of meditation as a potential treatment. It can be seen that participant ratings of effectiveness were highest for depression, followed by autism, and lowest for AS. A 3x2 repeated measures ANOVA found a highly significant difference, $F(2, 724) = 46.02$, $p < .001$, $\eta_p^2 = 11.3\%$. A significant effect of vignette character gender was also found, $F(1, 362) = 6.46$, $p = .011$, $\eta_p^2 = 1.8\%$. There was a significant interaction between vignette character age and effectiveness ratings, $F(4, 724) = 3.19$, $p = .013$, $\eta_p^2 = 1.7\%$, and significant interaction between gender and effectiveness ratings, $F(2, 724) = 4.50$, $p = .011$, $\eta_p^2 = 1.2\%$. Meditation was seem to be more effective on older people and women as opposed to men. There was no significant effect of vignette character age, $F(2, 362) = 2.23$, $p = .111$. Bonferroni-corrected post-hoc analyses showed significantly higher ratings of effectiveness for depression compared to both the autism ($p < .001$) the AS ($p < .001$). Ratings of effectiveness were also significantly higher for autism compared to the AS ($p < .001$).

3.2.5 Treatment talking to a family member/friend

Table 2e shows that participants rated this treatment relatively highly for all of the vignettes, with depression receiving the highest score followed by Asperger's syndrome closely followed by autism. A 3x2 repeated measures ANOVA comparing mean ratings of effectiveness of talking to family members or friends, with vignette character age and gender as the between-subjects factors, found a highly significant difference, $F(2,724) = 78.21$, $p < .001$, $\eta_p^2 = 17.8\%$. There was no significant effect of vignette character age or gender and no significant interactions were found ($F < 1$). Bonferroni-corrected post-hoc analyses found significantly higher ratings of effectiveness for depression compared to both autism (p <

.001) and AS (p < .001). Ratings of effectiveness were significantly higher for AS compared to autism (p = 0.004).

3.3 Prognosis

Table 2f shows a significant main effect of disorder was found, $F(1.84, 665.10) = 284.96$, $p < .001$, $\eta_p^2 = 44.0\%$. There was also a significant main effect of gender, $F(1, 362) = 15.32$, $p < .001$, $\eta_p^2 = 4.1\%$, (better for females) and a significant interaction between disorder and age, $F(3.68, 665.10) = 9.99$, $p < .001$, $\eta_p^2 = 5.2\%$. (better for older people). A significant interaction between disorder and vignette character gender was also found, $F(1.84, 665.10) = 3.30$, $p = .042$, $\eta_p^2 = 0.9\%$. with the prognosis for depression being much better than the other two, There was no significant effect of vignette character age ($F < 1$). Bonferroni-corrected post hoc analyses showed the mean prognosis score for depression ($M= 17.12$) was significantly higher ($p < .001$) than for both Asperger's syndrome AD($M= 15.82$) and autism ASD ($M= 12.72$). The mean prognosis score was significantly higher (p < .001) for Asperger's syndrome compared to autism.

3.4 Happiness

The means and standard deviations for the happiness question are displayed in **Table 2g**. A higher score indicates greater happiness. A 3x2 repeated measures ANOVA found a significant main effect of disorder, $F(1.93, 699.46) = 186.70$, $p < .001$, $\eta_p^2 = 34.0\%$. There was no significant effect of vignette character age or gender, and no significant interactions were found. Bonferroni-corrected post hoc analyses indicated significantly higher (p < .001) happiness ratings for Asperger's syndrome ($M= 4.57$) compared to autism ($M= 3.74$) and depression ($M= 3.00$). Participants also gave significantly higher happiness ratings ($p < .001$) for the individual with autism than the individual with depression.

4. **Discussion**

As predicted, participants demonstrated good MHL for depression. Contrary to predictions however severe ASD was recognised as a disorder by the most participants. This suggests that the symptoms of severe ASD are relatively easy to recognize as abnormal, yet lay individuals do not have the information to label the disorder "correctly". The fewest participants labelled Asperger's Syndrome (AS) as a disorder. This poor recognition rate of AS highlights the lack of understanding among lay individuals of an autism spectrum with varying levels of severity. This is likely because ASD was only introduced as an umbrella term to include AS and other autism spectrum disorders in DSM V (American Psychiatric Association, 2013), and lay individuals are very unlikely to be familiar with current theories and new developments such as this.

Participants were best at identifying depression correctly, less good at identifying severe ASD "correctly", and worst at identifying high functioning ASD "correctly". A notable number of participants claimed the individual in the AS vignette had "autism". Due to the fact that Asperger's Syndrome is encompassed by the term Autism Spectrum Disorder it is arguable that these participants showed an understanding of ASD, but with only 2 participants using the "correct" term it is difficult to say for certain. ASD was "incorrectly" labelled as social anxiety, depression, and attention deficit hyperactivity disorder (ADHD) on a number of occasions. Considerable similarities have been found between children with ASD and ADHD (Rumpf et al., 2012), as well as 50% comorbidity of ASD with conditions including major depressive disorder and anxiety (Gjevik et al., 2010; Lugnegard et al., 2011). Therefore, lay individuals have some understanding of the symptoms associated with ASD and what they entail, even though many participants in this study failed to label the disorder "correctly".

These results are similar to those of Sai and Furnham (2013) where, using case vignettes, it was found that a more common disorder (depression) was identified correctly 72.7% of the time, and a less common disorder (schizophrenia) was identified correctly 46.4% of the time. This raises the question as to why the general population seem to be better at diagnosing depression. In this current study 66.0% of participants claimed to have been diagnosed with depression, or have a close friend or family member diagnosed with depression, compared to only 26.7% for ASD. This suggests more experience with a disorder leads to better mental health literacy for that disorder. Indeed, lay individuals tend to receive most of their information about mental illness through personal experience, the experiences of people close to them, and the media. Lay individuals often "incorrectly" identify other disorders such as schizophrenia and in this study, ASD, as depression which suggests a tendency to over-diagnose depression (Farrer et al., 2008).

An overarching finding of this study is that the depression vignette generated higher scores than ASD for the treatment and prognosis questions. Participants thought treatment in any form would be most effective for depression, with exercise and talking to a family member or friend seen as the most effective. The only treatment rated more effective for another disorder (autism) was psychological therapy, and the difference in ratings for the two disorders was not significant. In terms of mental health literacy, these findings indicate lay individuals possess some knowledge as to the effectiveness of different treatment methods. The results show participants correctly acknowledged that there are existing drug therapies found to be effective for depression, but there is not a specific 'cure' for autism, and drugs that are often prescribed for the disorder tend to target the disordered sleeping and eating that individuals with autism often suffer from (Arroll et al., 2009; Bschor & Kilarski, 2016; Leucht et al., 2012). This research also suggests that lay individuals are aware of the more

extensive psychological and behavioural interventions available for ASD, such as behaviour modification (Sheinkopf & Siegel, 1998).

However, the fact that the treatments categorized as lifestyle changes were rated more highly is possibly because people are reluctant to seek help from mental health professionals and often report a fear of being embarrassed or judged (Barney et al., 2006). There is evidence that personal attitudes are more important than the attitudes of others in predicting intention to seek professional help. (Bayer et al., 1997).

Drug therapy was rated as the least effective for all disorders. This reflects the literature as psychotherapy has been found superior to drug therapy for treating depression (Steinbruek et al., 1983). This scepticism of pharmacological treatment may be unfounded. It is important to provide better, more accessible information in this area as the public will only endorse treatments they understand and have confidence in (Furnham & Buck, 2003). Some pharmacological therapies have been found to be very effective in the treatment of mental disorders, particularly when taken alongside a psychotherapy programme (Nemeroff et al., 2003).

With regards to ASD, participants showed less confidence in the efficacy of treatment and tended to give scores between three and five (towards the middle of the scale). These results could reflect the fact that there are still debates surrounding the best treatment for ASD, due to the extreme variability of the disorder and the fact that there is no universal consensus of the cause (Furnham & Buck, 2003). Therefore, participants were unsure of their answers, and opted to give a more average score.

Interestingly, the highest prognosis ratings were given to depression, despite the majority of participants claiming the individual with high-functioning ASD did not have a psychological disorder. Because of the high prevalence of depression in the population lay individuals are aware of the possibility for symptoms to improve and for individuals suffering

from depression to live a relatively normal life. The lower scores given to AS possibly reflects the fact that depression can be successfully treated. Participants did show an understanding that severe-ASD does not have a good prognosis, suggesting good mental health literacy. However, these results could also be a consequence of participants using information from the vignettes to answer the question, rather than knowledge they already possessed. This is not necessarily a negative observation, as it demonstrates how lay individuals were able to use the information given to make informed decisions about the prognosis of an individual. For example, social communication problems were outlined in both the ASD vignettes, which could have affected the overall prognosis result

Age and gender did not have as much of an effect as was predicted. For the prognosis questions female participants tended to give higher ratings, suggesting they are more optimistic about the prognosis of mental disorders.

This study, like all others had limitations. It is always desirable to have a large and representative population and to know more about them. We could have had longer and more detailed vignettes and enquired about other mental illness. Nevertheless, we believe the study makes an interesting contribution to a growing literature.

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Appendix A

Severe ASD vignette (language problems, doesn't seek relationships, sensitive to change, single focus)

Sally is 20 years old and has exhibited language difficulties since the age of 2. She has always been irritable, introverted, and does not seek social relationships with her family or peers. She is sensitive to unexpected change and often reacts aggressively by hitting her head or throwing things. This behaviour caused her to get bullied at school. Sally knows everything about trains, and has pictures of the London tube maps on her wall. Sally's father earns a lot of money as the vice-president of an insurance company, her mother stays at home to look after Sally.

High functioning ASD (Need for routine, single focus, lack of social skills)

Anna is 22 years old and works at her local library where she used to spend every weekend as a child. Anna has a degree in computer science from university. Anna used to get in trouble at school for not doing her homework, she was only interested in working on her computer. Anna does not have any friends. She only likes talking about computers and her peers don't enjoy this, so they don't spend much time with her. Anna does not look people in the eyes when she talks to them, and she often uses a monotone voice. Anna lives at home with her parents. Anna's father works in a bank, and her mother is a university lecturer. They have a 3-storey house in Hampstead.

Depression vignette (sad, lack of interesting in activities once enjoyed, change in eating habits, lack of concentration, tired)

Stephanie is 18 years old and has just started her first year at university. She has been feeling unusually sad for the last 4 weeks. Stephanie has always loved playing lacrosse, but recently she has been avoiding training and matches. Stephanie has gained quite a lot of weight because she is eating too much. Stephanie finds it hard to concentrate in her lectures and is not doing well at university because she keeps missing deadlines. Stephanie feels run down every day and finds it hard to get out of bed. Stephanie went to a private school and both her parents are doctors.

Appendix B

Word	Autism	AS	Depression
Autism/Autistic	152	22	0
Asperger's	17	16	0
Spectrum	4	2	0
Depression/Depressed	6	7	223
OCD	2	3	0
Anxiety/Social Anxiety	13	5	7
ADHD/ADD	9	6	0
Mental health illness	13	1	1
Eating disorder	0	0	7

Table 1.

Frequencies of Responses to Presence of Psychological Disorder and Treatment

Disorder	Disorder Present?		Treatment?	
	Yes	No	Yes	No
Autism	322 (87.5%)	46 (12.5%)	319 (86.7%)	49 (13.3%)
Asperger's Syn	100 (27.2%)	268 (72.8%)	125 (34.0%)	243 (66.0%)
Depression	282 (76.6%)	86 (23.4%)	307 (83.4%)	61 (16.6%)

Table 2. Mean ratings of types of therapy for different disorders.

	A. Effectiveness of Drug Therapy											
	Young				Middle Aged				Old			
Disorder	Male		Female		Male		Female		Male		Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	2.66	1.46	3.22	1.65	3.41	1.64	3.14	1.65	3.05	1.53	3.07	1.51
Asperger's	1.98	1.48	2.04	1.67	2.36	1.49	1.91	1.35	1.84	1.14	1.76	1.23
Depression	3.07	2.00	3.79	1.89	3.38	1.86	3.79	1.92	3.38	1.97	3.91	2.05
	B. Effectiveness of Psychological Therapy											
	Young				Middle Aged				Old			
Disorder	Male		Female		Male		Female		Male		Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	4.92	1.53	4.88	1.39	4.55	1.59	4.74	1.70	4.38	1.37	4.45	1.63
Asperger's	2.89	1.98	3.03	1.95	3.41	1.93	3.47	1.94	3.53	1.94	3.16	1.94
Depression	4.28	1.73	4.92	1.69	4.18	2.09	5.02	1.68	4.56	1.72	4.84	1.77
	C. Effectiveness of Treatment Exercise											
	Young				Middle Aged				Old			
	Male		Female		Male		Female		Male		Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	3.84	1.72	4.00	1.56	3.86	1.83	4.09	1.81	3.58	1.49	3.72	1.61
Asperger's	4.00	1.71	4.08	1.84	3.83	1.72	3.79	1.90	3.66	1.74	3.78	1.85
Depression	5.30	1.70	5.44	1.54	5.23	1.51	5.54	1.45	4.86	1.47	5.52	1.43
	D. Effectiveness of Meditation											
	Young				Middle Aged				Old			
	Male		Female		Male		Female		Male		Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	3.85	1.81	3.79	1.72	3.79	1.79	4.19	1.86	3.31	1.45	3.62	1.88
Asperger's	3.02	1.76	3.50	1.94	3.55	1.93	3.39	1.93	3.22	1.75	3.62	1.73
Depression	3.45	1.75	4.44	1.56	4.48	1.066	4.75	1.72	3.72	1.70	4.59	1.65

Table 2 *continued.*

E. Effectiveness of Talking to Family Member or Friend

Disorder	Young Male		Young Female		Middle Aged Male		Middle Aged Female		Old Male		Old Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	4.49	1.67	4.24	1.74	4.30	1.82	4.21	1.86	3.98	1.67	3.84	1.90
Asperger's	4.79	1.69	4.63	1.82	4.57	1.81	4.37	1.88	4.16	1.64	4.33	1.79
Depression	5.38	1.66	5.53	1.27	5.34	1.48	5.25	1.68	4.88	1.54	5.41	1.88

F. Mean Ratings of Prognosis

Disorder	Young Male		Young Female		Middle Aged Male		Middle Aged Female		Old Male		Old Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	12.93	3.62	14.06	2.82	11.57	3.64	13.72	3.33	11.83	3.59	12.22	3.51
Asperger's	15.02	2.85	15.99	2.79	15.70	2.97	15.72	2.31	16.30	2.39	16.21	2.06
Depression	15.61	2.98	17.46	2.69	16.48	3.14	17.67	2.50	17.72	2.75	17.78	2.53

G. Mean Ratings of Prognosis

Disorder	Young Male		Young Female		Middle Aged Male		Middle Aged Female		Old Male		Old Female	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Autism	3.62	1.24	3.93	1.24	3.86	1.35	2.93	1.03	3.52	1.05	3.59	1.11
Asperger's	4.74	1.14	4.33	1.35	4.41	1.32	4.74	1.14	4.80	0.95	4.41	1.12
Depression	3.25	1.47	2.92	1.32	3.05	1.38	3.04	1.51	2.89	1.27	2.88	1.44