Knowledge about Autism Spectrum Disorder (ASD) Predicts Motivation to Volunteer: A Cross-Sectional Survey among Psychology Students

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ABSTRACT

Children with Autism Spectrum Disorder (ASD) and their parents require support from the community, and could profit from volunteer work involving the family. At the same time, university students demonstrate a high willingness to volunteer in community initiatives such as work involving children with ASD. This study aims to examine the relationship between ASD knowledge and the motivation to volunteer among university students. Students (N=150) from a private university in the Klang Valley, Malaysia, participated in this study. Instruments utilized in this study were the Stone Autism Survey and Volunteer Functions Inventory. The results indicated that a higher level of ASD knowledge was the strongest predictor of higher motivation to volunteer after adjusting for relevant demographic factors and exposure to ASD children. Meanwhile, female and Hindu participants reported a significantly higher motivation to volunteer. This study emphasizes the need to increase factual knowledge about ASD among university students, and any effort to encourage students to volunteer in helping individuals with ASD should include knowledge sharing about this population.

Keywords: Autism spectrum disorder; ASD; knowledge; volunteerism

INTRODUCTION

ASD is a lifelong condition, typically marked by two major clusters of symptoms known as impairments in social communication skills as well as restricted, stereotyped behavioural patterns and/or interests (American Psychiatric Association 2013). In 2018, the estimation rate of ASD prevalence is 1 out of 59 children stated in United States of America (USA), which indicated an increase of 15% in prevalence rate within 2 years (Centers for Disease Control and Prevention 2014). In Asia, the ASD prevalence is 0.51% in East Asia, 0.31% in South Asia and 0.35% in West Asia.
Psychology majors from a private university in Malaysia who were 18 years and above, majoring in Psychology at the undergraduate level, and were able to provide consent. Exclusion criteria included students who were not able or willing to participate in this study and those who are less than 18 years old.

MATERIALS AND METHODS

A demographic questionnaire was used to gather information regarding participants’ age, gender, nationality, religion, and prior exposure to children with ASD. The total scale score had an acceptable internal consistency reliability of Cronbach’s α = 0.77.

Participants rated each item on a 6-point scale ranging from 1 (strongly agree) to 6 (strongly disagree). Higher scores indicate more knowledge of autism, with 4 as the cutoff point for extreme forms and “autism is an emotional disorder.”

The total scale score had an acceptable internal consistency reliability of Cronbach’s α = 0.80.
Volunteer Functions Inventory (Clary et al. 1998)

The level of motivation to volunteer was measured using the Volunteer Functions Inventory (VFI) was used. The VFI was developed by Clary and colleagues (1992), thus assessed the understanding and motivation of volunteers. This inventory consists of 30-item measure of motivations to volunteer (e.g., “I am concerned about those less fortunate than myself” and “Volunteering makes me feel better about myself”). Participants answered each item on a 7-point scale ranging from 1 (not at all important) to 7 (extremely important). This study recorded a mean internal consistency reliability of 0.90 across eight studies (Chacón et al. 2017). The internal consistency reliability of the scale score was Cronbach’s α=0.874.

PROCEDURES

Participants were conveniently sampled from a private university in the Klang Valley, Malaysia using a pen-and-paper survey questionnaire packet. Purposive sampling was done to ensure approximately equal representativeness from year 1, 2 and 3 psychology majors. Participants were approached at the beginning of the class session. They were briefed about the research, and those who provided informed consent were given the questionnaire packet. The questionnaires were self-administered by the participants. After approximately half an hour, all participants were asked to return the questionnaires to the researchers. No identifiers were collected from them. The data was cleaned and analyzed using the IBM Statistical Package for the Social Sciences v. 23 (SPSS Inc., Armonk NY, 2017). The study was conducted in accordance with the Declaration of Helsinki Ethical Principles.

RESULTS

A total of 150 students (Mean age=21.4 years, SD=1.65) completed the survey. Most of the participants were female (62.7%), in their first year (40.0%), Malaysians (71.3%), and Hindus (30.7%). Only 36.7% of the participants reported that they had prior exposure to an individual with ASD (refer to Table 1).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>56</td>
<td>37.3</td>
</tr>
<tr>
<td>Female</td>
<td>94</td>
<td>62.7</td>
</tr>
</tbody>
</table>

Prior to calculating the r, the assumptions of normality, linearity and homoscedasticity were assessed, and found to be supported. A normally distributed data should have an absolute value for skewness that is less than 3.0 (Kline 2005) and kurtosis that is less than 10.0 (DeCarlo, 1997). Specifically, a visual inspection of the normal Q-Q and detrended Q-Q plot for each variable confirmed that both were normally distributed. Similarly, visually inspecting a scatterplot of ASD knowledge against motivation to volunteer confirmed that the relationship between these variables was linear and heteroscedastic. There was a moderate positive correlation between ASD knowledge and motivation to volunteer (r = 0.383, p < 0.001).

An independent samples t-test was used to compare the level of volunteerism among genders and motivation to volunteer based on prior exposure to individuals with ASD. Levene’s test was also non-significant, thus equal variances can be assumed. The t-test was statistically significant, indicated that males (M = 133.93, SD = 16.61) had a lower level of volunteerism compared to females (M = 142.44, SD = 22.56), t (141.36) = 2.645, p = 0.009. However, there were no significant differences in the mean scores of the motivation to volunteer based on prior exposure to individuals with ASD, t (148) = 0.119, p = 0.906.

A multiple linear regression was conducted with motivation to volunteer as the dependent variable. Prior to interpreting the results, several assumptions were evaluated as suggested by Pallant (2020). First, stem and leaf plots and boxplots indicated that each variable in the regression was normally distributed, and free from univariate outliers. Second, inspection of the normal probability plot of standardized residuals as well as scatterplot of standardized
residuals against standardized predicted values indicated that the assumptions of normality, linearity and homoscedasticity of residuals were met. Third, Mahalanobis distance did not exceed the critical value indicating that multivariate outliers were not of concern. Fourth, relatively high tolerances for both predictors in the regression model indicated that multicollinearity would not interfere with our ability to interpret the outcome of the MRA. The results of the regression indicated that the predictors accounted for a significant 31.4% of the variance in knowledge of autism ($R^2 = 0.314$; adjusted $R^2 = 0.269$, $F(9, 146) = 6.980$, $p<0.001$). Based on the results, motivation to volunteer was the strongest predictor for knowledge of ASD, whereby those with better knowledge reported higher motivation to volunteer ($\beta = 0.475$, $p<0.001$). Those from the Hindu faith ($\beta = 0.352$, $p=0.006$) and females ($\beta = 0.236$, $p=0.002$) were also more motivated to volunteer (refer to Table 2).

### TABLE 2. Multiple linear regression analysis of predictors of motivation to volunteer among psychology undergraduate students

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>95% CI</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>66.360</td>
<td>20.053 - 112.668</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge of autism</td>
<td>0.810</td>
<td>0.568 - 1.052</td>
<td>0.475</td>
<td>6.620</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Age</td>
<td>-0.876</td>
<td>-2.725 - 0.973</td>
<td>-0.069</td>
<td>-0.937</td>
<td>0.350</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10.197</td>
<td>3.954 - 16.440</td>
<td>0.236</td>
<td>3.230</td>
<td>0.002</td>
</tr>
<tr>
<td>Male*</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Nationality</td>
<td></td>
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</tr>
<tr>
<td>Malaysian</td>
<td>-2.712</td>
<td>-10.662 - 5.238</td>
<td>-0.058</td>
<td>-0.675</td>
<td>0.501</td>
</tr>
<tr>
<td>Non-Malaysian*</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islam</td>
<td>5.510</td>
<td>-5.075 - 16.096</td>
<td>0.116</td>
<td>1.029</td>
<td>0.305</td>
</tr>
<tr>
<td>Christian</td>
<td>10.914</td>
<td>-1.927 - 23.754</td>
<td>0.171</td>
<td>1.681</td>
<td>0.095</td>
</tr>
<tr>
<td>Buddhism</td>
<td>7.944</td>
<td>-4.491 - 20.378</td>
<td>0.145</td>
<td>1.263</td>
<td>0.209</td>
</tr>
<tr>
<td>Hinduism</td>
<td>15.898</td>
<td>4.584 - 27.212</td>
<td>0.352</td>
<td>2.779</td>
<td>0.006</td>
</tr>
<tr>
<td>Others*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior exposure to children with autism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1.978</td>
<td>-4.246 - 8.203</td>
<td>0.045</td>
<td>0.629</td>
<td>0.531</td>
</tr>
<tr>
<td>No*</td>
<td></td>
<td></td>
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</tbody>
</table>

Abbreviation: CI, Confidence Interval. *Reference group. $R^2 = 0.314$; adjusted $R^2 = 0.269$, $F(9, 146) = 6.980$, $p<0.001$

**DISCUSSION**

There is a lack of resources for children with ASD and their parents in Malaysia, which highlights the importance of community involvement through volunteerism. University students, especially psychology majors, are anticipated to play a role as advocates and helpers for individuals with ASD and their families. The results of this study showed that participants who had better ASD knowledge had a higher motivation to volunteer. This may be due to the greater awareness generated on the need of children with ASD and their families. Another study indicated that teachers with increased ASD knowledge had also shown an increased self-efficacy to help individuals who have ASD (Lu et al. 2020). Perhaps increased knowledge provides the confidence to initiate helping behavior. In addition, past studies have also shown that those with better knowledge tended to report decreased stigmatization of individuals with ASD (Yu et al. 2020), which may indirectly increase prosocial behavior.

This study also found a significant difference in the motivation to volunteer between males and females. This can be related with previous studies where women had higher rates of volunteerism compared to men (e.g. Babcock et al. 2017). According to Baez and colleagues (2017), females have been culturally influenced to report higher empathy, and may therefore take on a more caregiving role compared to men (Babcock et al. 2017). Perhaps there is a connection between caregiving roles and knowledge of ASD. This study also sheds light that there may be a difference in volunteerism based on cultural factors such as different religious beliefs, whereby Hindus were more motivated to volunteer. However, the results should be treated with caution as religion is a complex field of study, and this study is unable to ascertain whether it was the level of religiosity or the different creeds or dogma of Hinduism that led to a higher level of motivation to volunteer among its adherents.
However, there is no relationship between prior exposure to children with ASD to motivation to volunteer, as was indicated in past studies (Harris et al. 2020; White et al. 2019). Perhaps in the Malaysian context, other factors such as gender socialization and cultural values were more important in motivating individuals to volunteer.

This study has a few limitations. The cross-sectional design was used in this study was a disadvantage as we could only establish the correlations between the variables, and not the causation. It is also possible that there may be bias among participants as they might be displaying social desirability to appear more motivated to volunteer. Finally, the participants were limited to a single major (psychology) in a Malaysian private university, and therefore has limited generalizability. Future studies could employ an experimental approach, where individuals were tested on their motivation to volunteer and actual volunteering behaviors before and after a program to increase ASD knowledge. A larger study on the state of ASD knowledge across disciplines among university students in Malaysia should also be conducted.

**CONCLUSION**

In conclusion, the fact that students who has better knowledge were more motivated to volunteer emphasizes the need to increase factual knowledge about ASD among university students, and any effort to encourage students to volunteer in helping individuals with ASD should include knowledge sharing about this population. University administrators, especially those from the healthcare professions, should encourage volunteer activities among students as a step towards increasing the quality of life and social inclusion of children with ASD and their parents.

**ACKNOWLEDGEMENT**

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**REFERENCES**


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