High-Functioning Autistic Spectrum Disorder: A Conceptual Model of Health

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Introduction

Approximately $11.5 billion to $60.9 billion (2011 US dollars) is spent per year on a person diagnosed with Autism Spectrum Disorder (ASD) in the US with an estimated financial impact on families living with ASD is approximately 6.0 to 9.5 times greater than families with children who do not have autism (Buescher Cidav, Knapp, & Mandell, 2014; CDC, 2018; Giarelli, Ruttenberg & Segal, 2012; Lavelle, et al., 2014; Shimabukuro, Grosse, & Rice, 2008; van Steensel, Dirksen, & Bögels, 2013). A higher risk of comorbidities such as allergic rhinitis, Type 1 diabetes, seizure disorders, anxiety, attention deficit hyperactivity disorder (ADHD), and Crohn’s disease within the population of children diagnosed with ASD contributes to an increase of health care visits and costs compared to typically developing children (Bultas, McMillin, & Zand, 2016; Chen et al., 2012; Chiri & Warfield, 2012; Wu, Kung, Li & Tsai, 2014; Lavelle, et al., 2014).

There are varying degrees of symptomatology within ASD and is multidimensional in nature (American Psychiatric Association [APA], 2015). The three main criteria for a diagnosis of ASD are: communication problems, repetitive body movements or behaviors, and struggles to relate to other people, events or things (APA, 2015). One subgroup within the ASD continuum is High Functioning Autism Spectrum Disorder (ASD). Many individuals were diagnosed as HF-ASD or Asperger Syndrome before the criteria of diagnosis changed in 2015 when the DSM IV was updated to the DSM V. According to previous research and criteria, an individual with a diagnosis of ASD and an intellectual quotient >70 (normal range) is often referred as HF-ASD (Baron-Cohen, 2000).

Consideration in assisting individuals with HF-ASD, is to apply a theory to predict health behavior. Two theories that are used to assist in the determination or prediction of health behavior are the Health Belief Model (HBM; Rosenstock, 1974; The National Cancer Institute [NCI], 2005) and the Theory of Reasoned Action (TRA; Ajzen & Fishbein, 1980; Fishbein, 2008; Fishbein & Ajzen, 1975; NCI, 2005). The purpose of this presentation is to review HBM and TRA, evaluate these two theories within the context of an adult diagnosed with HF-ASD, and present a working model to predict and explain health behavior of adults with HF-ASD.

Health Belief Model (HBM)

The HBM is a middle-range theory, based on psychosocial theory, addressing the determents of health motivation in individuals and was most recently updated in the 1980’s (Rosenstock, Strecher, & Becker, 1988; NCI, 2005). Essentially, the HBM states that an individual will not act to change a health behavior if he or she does not believe the condition in question will personally impact them (Carpenter, 2010; Rosenstock, 1974, Rosenstock et al., 1988). The core of the HBM is based on the evaluation of six concepts to determine if an individual will adopt a health behavior (NCI, 2005; Poss, 2001; Rosenstock, Strecher, & Becker, 1988). The concepts are: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy.

Theory of Reasoned Action

Developed in the 1970’s, the TRA assumes that humans are rational and states that behavior intention is the most important predictor of health behavior and the two concepts of attitude and subjective norms influence intention (Ajzen & Fishbein, 1980; Fishbein, 2008; Fishbein & Ajzen, 1975; NCI, 2005). Attitude
is further determined through consideration of relative importance, personal beliefs, and evaluation about behavior outcomes. Relative importance is also considered with normative beliefs and motivation to comply, accounting for overall subjective norm.

**HBM and TRA in Relation to Adults with HF-ASD**

Adults diagnosed with HF-ASD, are a unique population due to the level of intelligence being average or above average, but with deficits in communication, relating to people, events, or thing, and repetitive habits with behavior (Baron-Cohen, 2000; Nadig et al., 2010; Scheeren et al., 2013). Due to this, both the HBM and TRA should be evaluated for fit with the population of interest.

**HBM.** The HBM relies on individuals considering the likelihood of acquiring the condition (perceived susceptibility) and the consequences and seriousness of the condition (perceived severity). An adult with HF-ASD will often not be able to consider long-range consequences, but only consider the short-range consequences (Zimmerman et al., 2016). Positive aspects or reinforcement of action does not generate a change in behavior for an individual with HF-ASD (Baron-Cohen, 2000; Nadig et al., 2010; Zimmerman et al., 2016). Therefore, the concept of perceived benefits does not add value in predicting behavior within the population of HF-ASD. One aspect that is beneficial for fit is the non-normative consideration of the HBM, which would allow an APN to tailor risk and benefits to the individual (Carpenter, 2010; NCI, 2005).

**TRA.** Standardization scales used for measurement may be either a benefit or a challenge to an adult with HF-ASD. However, the inclusion of cultural considerations when evaluating attitudes is beneficial for population of adults diagnosed with HF-ASD. The personal evaluation of the health behavior (attitude) allows for individual consideration of the condition and does not rely on comparison to others (Ajzen & Fishbein, 1980; Fishbein, 2008; Fishbein & Ajzen, 1975; Murphy, et al., 2014; NCI, 2005; Poss, 2001). Due to the challenges of being able to relate well with others, events and things, the principle of subjective norm does not provide an opportunity for accurate assessment of health behavior and consequently does not add value for predicting intentions with the population of interest (APA, 2015).

**Proposed Model**

Based on the information above, to apply only one model to the population of adults with HF-ASD, would be limited to effectively predict health behavior. Therefore, a combined model that accounts for the characteristics unique to the population of interest should be contemplated. There are fewer challenges to the TRA as compared to the HBM when considering the population of adults with HF-ASD. The biggest barrier to the use of the TRA with the population of interest is the construct of subjective norm. An adult diagnosed with HF-ASD does not have the full ability to consider social norms or compare self to other important individuals in his or her life (Baron-Cohen, 2000; Nadig et al., 2010; Zimmerman et al., 2016). To adjust for the challenge of relating to others, things, or events, a proposed alternative of individual norm instead of subjective norm should be contemplated.

**Individual norm.** The concept of individual norm employs aspects of the HBM to determine health behaviors. Four of the concepts within HBM are considered to add value to the prediction of health behavior with adults with HF-ASD, which are: perceived susceptibility, perceived severity, perceived barriers, and cues to action.

Although perceived susceptibility encompasses some reflection of long-term chances of acquiring a health condition, an APN could modify the message to the individual to represent possible current challenges (NCI, 2005; Poss, 2001; Rosenstock, 1974; Rosenstock, Strecher, & Becker, 1988). Altering the message of severity to the individual will enable the person to understand specific consequences to his or her immediate future. The message should be specific and account for activities that would disrupt current behavior or fixation that the adult with HF-ASD has currently (Baron-Cohen, 2000; Nadig et al., 2010; Zimmerman et al., 2016). Perceived barriers should still be considered for a determination of individual norm, due to the ability of an APN to correct misinformation and provide guidance that will...
consider an individuals’ behaviors and interests (NCI, 2005; Poss, 2001; Rosenstock, 1974; Rosenstock, Strecher, & Becker, 1988). A person with HF-ASD can process perceived barriers and adapt behaviors to overcome obstacles. Cues to action are often immediate messages and information, and therefore, is an important concept due to individuals with HF-ASD interpreting the information pertaining to the immediate future. This consequently adds value to predicting health behavior (Baron-Cohen, 2000; NCI, 2005; Poss, 2001; Rosenstock, 1974; Rosenstock et al., 1988; Zimmerman et al., 2016). Since each of the concepts can be measured through standardized testing, individual norms may be tested to determine the impact on intention and overall health behavior.

Conclusion

Based on the high probability of an APN providing health and wellness care to an individual with HF-ASD in a primary care setting, there is a necessity to understand and predict health behaviors for the population of interest. The requirement of having a working conceptual model of health for adults with HF-ASD is apparent. An adaption of the proposed model with the variation of individual norms, may provide an opportunity to further expand our knowledge and understanding of health behaviors. Although the conceptual model presented with the inclusion of the context of individual norm has not been empirically tested, the model provides a foundation for further exploration. An APN who is equipped with a working model will be able to communicate in an effective manner and thus, optimize patient encounters.

Title:

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References:


Abstract Summary:

To explore two widely used health behavior models, the Health Belief Model and the Theory of Reasoned Action when applied to the population of adults with high-functioning autism spectrum disorder. A second aim is to present a conceptual model of health to elucidate health behavior within the population of interest.

Content Outline:

1) Introduction

a) Provide a background on the population of High Functioning – Autism Spectrum Disorder (HF-ASD) adults, review Health Belief Model (HBM) and Theory of Reasoned Action (TRA), evaluate these two theories within the context of an adult diagnosed with HF-ASD, and present a working model to predict and explain health behavior of adults with HF-ASD.

2) Background

a) United States prevalence of ASD is 1 in 68, slightly higher in males

b) Main criteria: communication challenges, relating with others, things or events, and repetitive behaviors or movements

c) According to previous research and criteria, an individual with a diagnosis of ASD and an intellectual quotient >70 (normal range) is often referred as HF-ASD

3) Wellness and Prevention
a) Primary Care Setting

i) Comorbidities

(1) Allergic rhinitis, Type I diabetes, Crohn’s disease, seizure disorders, anxiety

ii) Typically developing outpatient care 3.7 x year

iii) ASD outpatient care 10.7 x year

iv) Health costs for a person diagnosed with ASD is approximately $11.5 billion - $60.9 billion

b) HBM

i) Psychosocial theory

ii) Developed in the 50s (Rosenstock, Hoschbaum, Kegeles, and Leventhal – US Public Health Service)

iii) The most current updated model is from the 80s

iv) Explain how individuals participate in preventive health behaviors

v) Advantages

(1) Generalizable

(2) Test direct relationship between one variable and health behavior

(3) Predictive

vi) Disadvantages

(1) Non-cultural

(2) Personality factors

(3) Social support

(4) Previous health experiences

(5) Demographics

c) TRA

i) Developed in the 70s (Fishbein; Fishbein & Ajzen)

ii) Explains the relationship between: beliefs, attitudes, intentions, and behavior

iii) Assumption: humans are rational
iv) Advantages
(1) Cultural perspective (attitudes)
(2) Predict and understand behavior
(3) Intentions determine behavior
v) Disadvantages
(1) Demographics
(2) Personality factors
(3) Explains intentions not behaviors
d) Challenges with Fit regarding Adults with HF-ASD
i) Difficulty relating to people, things and events
(1) TRA – subjective norm
(2) HBM – self-efficacy, perceived vulnerability
ii) Communication challenges
(1) TRA – standardized scales
(2) Repetitive Behaviors
iii) TRA & HBM - may be intrinsic
4) Advantages with Fit regarding Adults with HF-ASD
a) Difficulty relating to people, things and events
i) TRA – cultural considerations
ii) HBM – non-normative
b) Communication challenges
i) TRA – standardized scales
ii) Repetitive Behaviors
5) Best Fit regarding Adults with HF-ASD
a) A combination of the two models
b) Primarily TRA

6) Proposed model

a) Use of Individual norms instead of Subjective norms
b) Considers the lack of social cues and understanding
c) Internal perceptions

7) Considerations for proposed model

a) Help primary care understand individual health seeking behaviors
b) Hard to generalize to entire population
c) Does not explain how to change behavior

8) Conclusions

a) HF-ASD population unique
b) TRA considers cultural variations
c) TRA determines intention to act
d) Individual factors can be measured

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