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ORIGINAL ARTICLE

Perceptions of attenuated psychosis in a diverse sample of undergraduates

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Aim: Prior to the release of the fifth edition of the Diagnostic and Statistical Manual for Mental Disorders, experts in the field of psychosis research considered including a psychosis high-risk syndrome—attenuated psychosis syndrome—as a formal diagnosis. Opponents argued that such a diagnosis may increase the risk of stigmatization of individuals whose symptoms often remit. Although previous research has examined provider perceptions of attenuated psychosis syndrome, little work has focused on lay perceptions.

Methods: A total of 455 college students read three vignettes, each depicting a character with a different level of psychotic disorder (attenuated psychosis syndrome, schizophrenia or no psychosis). Following each vignette, participants responded to questions assessing: (1) identification of the character as mentally ill, (2) stigmatizing attitudes and (3) beliefs regarding the helpfulness of potential treatments.

Results: Compared to a character with no psychosis, participants identified the attenuated psychosis syndrome character as more likely to be experiencing mental illness, but endorsed only slightly more stigmatizing attitudes. Participants tended to rate psychological types of treatment as more helpful than other types for an attenuated psychosis syndrome character.

Conclusions: Non-expert undergraduates appear to view attenuated psychosis symptoms as indicative of mental illness, though not as severe as schizophrenia symptoms. The minimal level of stigma endorsement indicates that college students may not be especially likely to spontaneously stigmatize peers with attenuated psychosis syndrome.

KEYWORDS

attenuated psychosis syndrome, attitudes toward mental illness, early psychosis, schizophrenia, stigma

1 | INTRODUCTION

Researchers and clinicians have debated the usefulness of having a psychosis risk syndrome (ie, attenuated psychosis syndrome [APS]) as an official diagnostic category, particularly in the years leading up to the publication of the most recent Diagnostic and Statistical Manual for Mental Disorders (DSM-5; American Psychiatric Association, 2013; Woods, Walsh, Saksa, & McGlashan, 2010; Yung, Nelson, Thompson, & Wood, 2010). One argument for including APS as a diagnostic category is that it would facilitate the identification of individuals who exhibit early signs of psychosis, which would enable early intervention designed to delay the onset, lessen the course, and potentially prevent psychosis altogether (Ruhrmann et al., 2010;

Woods et al., 2010). However, one argument against including APS as a diagnosis is the potential for inaccurate perceptions of APS among non-expert clinicians, laypeople and patients experiencing the symptoms (Fusar-Poli & Yung, 2012; Tsuang et al., 2013). Highlighting this issue, in a national sample of psychologists, psychiatrists, and general practitioners, the overwhelming majority identified a vignette character with APS (according to the proposed Section 3 criteria) as having a mental illness (92%), and most (78%) classified the mental illness as on the schizophrenia spectrum (Jacobs, Kline, & Schiffman, 2011). Among those who diagnosed the APS character on the schizophrenia spectrum, almost 30% believed the character met criteria for a diagnosis of full schizophrenia, indicating that a significant portion of treatment providers may be inclined to assign a more serious diagnosis to APS

symptoms. In a follow-up study, the majority of participants (69%) indicated that antipsychotic medication would be an appropriate treatment for the APS individual in the vignette (Jacobs, Kline, & Schiffman, 2012).

Taken together these results raise possible concern, as they indicate that practitioners may be misdiagnosing APS as full schizophrenia and providing treatments that are not entirely appropriate for individuals with APS. Experts in early psychosis have noted that the potential costs of prescribing antipsychotics to people with APS often outweigh the benefits (McGorry et al., 2009; Nelson & Yung, 2010). In their best practice guidelines, several international organizations have stated that antipsychotics should be used judiciously with at-risk individuals, if at all (Addington, Addington, Abidi, Raedler, & Remington, 2017; International Early Psychosis Association, 2005; Schmidt et al., 2015). Thus, the finding that 69% of treatment providers believe antipsychotic medications would be helpful for an individual with APS appears at least partially inconsistent with best practices for APS treatment. If the diagnostic criteria for APS were well-defined in the manual, then mental health professionals could more accurately identify and treat APS, which could lead to fewer young people with APS being prescribed antipsychotic medications.

A second argument against including APS in the DSM-5 is that a diagnosis of APS would expose young people to internal and external stigmatization (Corcoran, First, & Cornblatt, 2010; Yang, Wonpat-Borja, Opler, & Corcoran, 2010), which may be especially problematic because the majority of people identified as at risk do not later convert to full psychosis in longitudinal studies (Addington & Heinssen, 2012; Fusar-Poli et al., 2013). This raises interesting ethical considerations, as an interest in avoiding the potential stigmatization associated with labelling someone as "at-risk of psychosis" may result in a threat to autonomy by providing the person with incomplete information regarding the underlying factors of his or her presenting problems (Corcoran, 2017). Although research has demonstrated that at-risk individuals do not appear to perceive much stigma associated with the labels "ultra-high risk" and "attenuated psychosis syndrome," (at least not to the degree that clinicians perceive this stigma on behalf of these individuals; Kim et al., 2017), research is scant as to how peers around the modal age of APS development perceive those in the high risk state. As psychotic illnesses tend to emerge between the ages of 15 and 35 (Kessler et al., 2007), late adolescence and early adulthood is an optimal time frame for understanding potential stigma against psychosis risk (Amminger et al., 2006; Cornblatt, Green, Walker, & Mittal, 2009).

Undergraduate samples provide an ideal opportunity to understand this developmental window, as nearly half of individuals aged 18 to 24 in the U.S. attend college (Snyder, de Brey, & Dillow, 2016). One recent study with an undergraduate sample found that a vignette character labelled as "state of high risk for psychosis" was stigmatized in the same way as a character labelled as having schizophrenia (Yang et al., 2013). Critically, the character was still stigmatized, though to a lesser extent, if an explanation was provided for the meaning of "risk for psychosis." In another study attempting to address stigmatization of subthreshold psychosis among college students, participants read a vignette depicting a person "at-risk" and were asked to provide a label they felt best described the character (Anglin, Greenspoon, Lighty,

Corcoran, & Yang, 2014). The majority of participants did not use a label associated with psychosis (eg, schizophrenic, paranoid, etc.), and instead were more likely to use labels related to other psychiatric diagnoses (eg, anxious, depressed, etc.) or non-psychiatric labels (eg, weird, troubled, etc.). People who used a label associated with psychosis were more likely to endorse stigmatizing views. These results suggest that many college students may not view attenuated psychotic symptoms as explicitly psychotic, but stigmatizing attitudes may be more likely among those who do. However, because participants' prior level of knowledge about psychosis was not assessed, it remains unclear whether college students understand the concept of psychosis and are inclined to recognize the symptoms as mental illness.

These studies provide valuable preliminary information regarding how undergraduates conceptualize the high risk state; however, to our knowledge, no previous study has examined attitudes toward APS as defined by the proposed clinical criteria (Tsuang et al., 2013). The current research used vignettes depicting three different levels of psychosis (schizophrenia, APS and no psychosis) to assess whether undergraduates view attenuated psychotic symptoms as constituent of mental illness, to what extent they are inclined to stigmatize these symptoms, and what they believed to be the most appropriate treatments for APS individuals. If APS is identified as mental illness, and associated with increased stigmatization or inaccurate impressions of treatments for attenuated psychosis symptoms, it may suggest that undergraduates are prone to think negatively of individuals exhibiting APS symptoms, which could speak to a need for increased education and awareness of early psychosis on college campuses. Understanding more about the nature of stigmatizing attitudes toward the high-risk state could also aid treatment providers in working directly with high-risk clients to combat stigma or associated prejudicial attitudes. We expected to find that participants would endorse different beliefs regarding the presence and stigmatization of mental illness based on severity of psychosis exhibited by a vignette character such that the more severe character would be associated with higher levels of stigma, stronger identification of the character as mentally ill and higher rates of psychological treatment endorsement.

2 | METHODS

2.1 | Participants

Participants were 522 undergraduates from a large, public university who completed the study online. All participants were recruited from introductory psychology courses via class announcement and participated in this study as part of a course requirement. Sixty-seven participants were removed due to duplicate entries in the online system or missing more than 2/3rds of their data, resulting in a final sample of 455 participants.

2.2 | Materials

2.2.1 | Vignettes

Vignettes used in this study were based on those developed by Jacobs et al. (2011), which depicted individuals experiencing either no

psychosis, attenuated psychosis (according to the proposed clinical criteria for APS), or full psychosis (according to DSM-IV-TR diagnostic criteria). Vignettes were sent to five experts who rated how much they agreed that the vignette accurately depicted the intended condition. More than 80% of the experts rated each vignette as depicting the condition "well" or "very well," and vignettes were revised based on feedback (see Jacobs et al., 2011, for further details regarding vignette development).

The vignettes were modified for the current study to be more relevant to the demographic profile of the participants by adjusting each character's specified ethnicity to Japanese, Caucasian, or Hawaiian. After accounting for all possible combinations of ethnicity and level of psychosis, nine vignettes comprised the final pool. Each participant read and responded to questions about three of the nine vignettes, one randomly selected from each of the three levels of psychosis.

2.2.2 | Questionnaires

Following each vignette, participants completed three questionnaires. First, they were asked 12 questions created for the current study (Attitudes Toward Mental Illness questionnaire) to assess attitudes toward the symptoms exhibited by the vignette character, particularly whether participants believed the character was mentally ill, and whether they endorsed stigma toward the person. These questions were rated on a scale from 1 (strongly disagree) to 5 (strongly agree). Next, participants rated on a 1 (not at all) to 5 (certainly) scale two 16-item questionnaires (adapted from Narikiyo & Kameoka, 1992): types of help for the character and sources of help. All questionnaires had adequate internal consistency (see Table 1).

2.2.3 | Preliminary statistical analysis

Previous research with the types of help and sources of help questionnaires analysed each individual item with a series of ANOVAs. In the current research, we took an empirical approach to organizing the items using an exploratory factor analysis (EFA). This allowed us to limit the number of statistical tests conducted as well as explore the underlying structure of the responses. Responses from the first half of participant ratings of the APS character were included in the EFAs, which was conducted in Mplus v7.2 using a maximum likelihood estimator and geomin rotation. Scree plots were then examined to determine the appropriate number of factors for each questionnaire to be extracted. We extracted three factors from the 12 items of the Attitudes questionnaire which were labelled Identification, Stigmatization, and Emotional State. Four factors were extracted from the 16 items of the Types of Help questionnaire, labelled Physical, Psychosocial, Alternative, and Psychological. Four factors were also extracted from the 16 items of the Sources of Help questionnaire: Psychological, Community, Social and Alternative. The factor loadings from these EFAs can be found in Tables S1-S3 in Appendix S1, Supporting Information.

The factor structure identified in the EFAs for each questionnaire was then applied to the second half of APS data with CFA to confirm that the model fit the data well and fit better than alternative models with fewer factors extracted (see Table S4 in Appendix S1). In addition to quantitative support for their validity, these factors have face validity in that the items on each factor appear to measure the same construct. Factor scores were created by summing the items that loaded highest on each factor.

2.3 | Procedure

This study was approved by the University of Hawaii at Manoa Institutional Review Board. Participants took part in the study in exchange for partial completion of a course requirement. All participants proceeded through the questionnaires in the same order, beginning with consent and demographic information. This was followed by the first

TABLE 1 Repeated-measures ANOVAs by psychosis level

Questionnaire	α	APS M (SD)	SCZ M (SD)	NONE M (SD)	F*	Partial eta square ($\eta^2 p$)[a]
Attitudes	0.58					
Identification		2.79 (0.67)	3.01 (0.64)	0.84 (0.82)	1367.36*	0.75
Stigmatization		3.07 (0.60)	3.21 (0.61)	2.91 (0.55)	62.41*	0.12
Emotional state		3.47 (0.55)	3.18 (0.61)	4.46 (0.66)	580.07*	0.56
Types	0.88					
Physical		2.27[b] (0.87)	2.42 (0.91)	2.24[b] (0.86)	15.17*	0.03
Psychosocial		2.61 (0.91)	2.80 (0.95)	3.03 (0.93)	50.96*	0.10
Alternative		1.45[b] (0.70)	1.41[b] (0.64)	1.22 (0.56)	40.99*	0.08
Psychological		3.07 (1.04)	3.27 (1.01)	1.62 (0.77)	594.36*	0.57
Sources	0.86					
Psychological		3.64 (1.04)	3.80 (1.04)	2.29 (1.08)	479.05*	0.51
Community		2.03[b] (0.84)	2.03[b] (0.84)	1.57 (0.75)	127.66*	0.22
Social		2.95[b] (0.94)	3.03[b] (0.94)	3.01[b] (0.87)	2.13	0.01
Alternative		1.42[b] (0.61)	1.40[b] (0.64)	1.18 (0.52)	54.52*	0.11

Abbreviations: APS, attenuated psychosis syndrome condition; NONE, no psychosis condition; SCZ, schizophrenia condition.

[a] Convention for interpreting partial eta-squared effect sizes dictates that $\eta^2 p > 0.01$ indicates a small effect, $\eta^2 p > 0.06$ indicates a medium effect, and $\eta^2 p > 0.14$ indicates a large effect.

[b] Means sharing a superscript are not significantly different from one another.

*$P < 0.01$.

of three vignettes, selected at random from the pool of nine options and questions about the character in the vignette.

3 | RESULTS

3.1 | Participants

The mean age of the sample was 20.4 years (SD = 4.92). 72.3% of participants were female, and the breakdown of reported ethnicity was 38.3% Asian, 24.2% Multiethnic, 18.2% White, 13.2% Native Hawaiian, and 6% other (eg, Hispanic, African-American or other Pacific Islander).

3.2 | Severity of illness comparisons

To test whether participants endorsed different beliefs regarding treatment recommendations, presence, and stigmatization of mental illness based on severity of psychosis exhibited by the vignette character, a series of repeated-measures ANOVAs was conducted with each of the identified factors using APS, schizophrenia (SCZ) and no psychosis (NONE) as levels. Because assumptions of sphericity were violated, the Huynh-Feldt correction was applied to F statistics and degrees of freedom. As can be seen in Table 1, all but one of these F tests (Sources-Social) was statistically significant. Overall, planned paired samples t tests revealed that the SCZ character was viewed as more impaired and more likely to benefit from treatment than the NONE character. The comparison between the APS and NONE characters followed this pattern, with one exception (Types-Physical). The comparison between the SCZ and APS characters was more nuanced, with the ratings for SCZ being higher on 8 of the 14 factors.

3.2.1 | Attitudes

On the Attitudes Toward Mental Illness questionnaire, planned paired samples t tests indicated significant differences between all three psychosis levels. The SCZ character was more likely to be identified as mentally ill, stigmatized, and associated with a more negative emotional state than both the APS character and the NONE character. The APS character was more likely than the NONE character to be identified as mentally ill, stigmatized, and rated as having a more negative emotional state.

3.2.2 | Types of help

Paired samples t tests indicated significant, but slight, differences between the SCZ character and both the APS character and the NONE character on the Physical factor. The difference between the APS and the NONE characters on this factor was non-significant. Psychosocial types of help were more likely to be endorsed for the NONE character than for both the APS character and the SCZ character, but were rated significantly higher for the SCZ character than for the APS character. The Alternative factor was rated significantly lower for the NONE character as compared to both the APS character and the SCZ character, which did not significantly differ. Psychological types of help were more likely to be endorsed for the SCZ character than for both the APS character and the NONE character; however,

psychological help was rated more helpful for the APS character than for the NONE character.

3.3 | Sources of help

Paired samples t tests revealed significant differences between all three psychosis levels on the Psychological factor such that participants rated psychological help highest for the SCZ character followed by the APS character, followed by the NONE character. Community-based sources of help were rated significantly higher for the APS and SCZ characters compared to the NONE character. The difference between the APS and SCZ means on this factor were non-significant. Alternative sources of help were equally likely to be endorsed for the APS character and the SCZ character, with the NONE character rated significantly lower than both psychosis characters. No significant differences were found between psychosis levels on the Social factor.

4 | DISCUSSION

The primary goal of the current study was to explore how undergraduates view APS, and whether they hold stigmatizing attitudes towards individuals with these symptoms. Results suggest that participants tended to think of APS as less severe than schizophrenia, but recognized APS symptoms as related to mental illness. Symptoms exhibited by a schizophrenia vignette character were most likely to be identified as mental illness and stigmatized, followed by APS, then no psychosis. This result is in contrast to previous research that suggests mental health professionals and laypeople tend to think of APS in similar terms to schizophrenia (Jacobs et al., 2011; Yang et al., 2013); however, the effect size between the schizophrenia and APS characters on the Identification factor was relatively small (Cohen's d = 0.33). Participants were more likely to support psychological types and sources of treatment (eg, "therapy;" "psychologist") for the schizophrenia character, followed by APS, then no psychosis. These results are consistent with prior findings that people suggest psychological and psychosocial sources of help (eg, meeting with a counsellor or psychologist and speaking to family and friends) for people in the first episode or chronic stages of schizophrenia (Jorm, Mackinnon, Christensen, & Griffiths, 2005).

A closer scrutiny of the current sample's stigmatization ratings reveals that, although more likely to stigmatize the APS character than the NONE character, most participants did not endorse negative attitudes toward the APS character. For example, only 13.4% agreed (by rating "agree" or "strongly agree") that the APS character is shameful; only 9.7% agreed that they would feel embarrassed if the person was a family member; and merely 6.2% agreed that they would stop being friends with the person. Furthermore, although participants reported statistically significant stigmatizing attitudes towards the APS group, effect sizes were small (eg, for APS and NONE character, Cohen's d = 0.28). This suggests that the magnitude of stigmatizing beliefs directed at individuals exhibiting APS symptoms may be only minimally greater than that for individuals with minor overt behavioural issues without psychosis, provided that diagnostic labels are not made explicit. Future research could include an APS vignette with

and without diagnostic information to examine if the presence of a diagnosis incrementally contributes to stigmatization over and above the description of symptoms.

A notable strength of the current study is the use of an APS vignette that was the first to be systematically developed according to the proposed diagnostic criteria and determined by experts in the field to be an accurate representation of the intended condition. Previous research in this area has tended to utilize case studies of APS individuals transcribed by clinicians, or vignettes based on symptoms that approximate—but do not necessarily meet criteria for—APS. However, there are concerns with vignette research, one of which being that this technique in isolation does not allow for connections to be made between attitudes and behaviours (Barter & Renold, 1999; Hughes & Huby, 2004). Because one of the primary issues in the APS debate concerns whether stigmatizing attitudes toward APS individuals would translate into discrimination, future research could obtain a more direct estimate of participant behaviour, possibly through the inclusion of social distance measures or techniques. Furthermore, we did not employ a systematic measure of stigma. Though the method of obtaining stigma data via survey questions is largely consistent with previous studies (eg, Griffiths et al., 2006), future research should continue to work toward incorporating standardized measures.

The primary limitation of this study concerns its sample characteristics. First, although the sample in the current study was diverse in terms of ethnicity, it consisted primarily of young undergraduates enrolled in a psychology course. We chose college students as participants for the current research because they are in the age range at which most people develop psychosis and thus could be peers of those with APS. However, the results of this study may not generalize to non-college-educated persons with different demographics. Furthermore, the fact that all participants in this sample were enrolled in a psychology course casts doubt over whether this was truly a sample of laypeople or even generalizable to all college students. Some research suggests that exposure to undergraduate-level information about psychology promotes increased tolerance of mental illness (see, eg, Kendra, Cattaneo, & Mohr, 2012). This raises valid concern regarding the scope of our conclusions. At the same time, introductory psychology courses are often taken by students who do not major in psychology, which suggests that the sample may be similar to the broader population of the university.

Another potential limitation is that we did not assess participants' degree of familiarity with, or exposure to, individuals with mental illness nor did we collect data on whether participants had themselves been diagnosed with mental illness or had a family history of any psychiatric condition. It is unclear to what extent our results would differ based on the sample's experience with mental illness. According to work by Kim et al. (2017), the presence of family history of psychiatric illness or personal experience with psychosis symptoms can contribute to increased stigmatization of the high risk state. Future research could address these issues by examining attitudes toward APS in undergraduate samples with varying degrees of exposure to mental illness. Additionally, future research could work to clarify attitudes toward APS among undergraduates who have gained exposure to mental illness information in different contexts (ie, students in an introductory psychology course vs an advanced psychopathology course).

In sum, the results of this study indicate that undergraduates have different attitudes towards APS symptoms than they do toward full-blown schizophrenia symptoms. We found that, within our sample, there appears to be little stigma associated with APS symptoms as described according to the proposed diagnostic criteria. Further work on the subject of APS may continue to refine our understanding of the nature of stigmatizing attitudes toward the condition and provide additional clarification regarding whether the benefits of its inclusion as a diagnostic category in a future iteration of the DSM outweigh the potential risks.

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