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The intrasubjectivity of self, voices and delusions: A phenomenological analysis

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Abstract

To advance the area of phenomenology of voices and their interrelatedness to forms of delusions this study investigated the prevalence and interrelatedness of co-occurring auditory verbal hallucinations (AVHs) and delusions. Additionally we explored the characterization of distinct sub-categories/clusters of AVHs and delusions. Ninety-two participants experiencing psychosis were administered standardized clinical measures. We found a significant diagnostic difference with increased prevalence of co-occurring AVHs and delusions within the schizophrenia group compared to the bipolar with psychosis group. Regardless of diagnosis, there was a significant positive correlation between AVHs and delusions of reference, persecution, control, thought insertion, thought withdrawal and thought broadcasting. However, no significant relationship was found between AVHs and grandiose, somatic, religious, guilty or jealousy-themed delusions. Cluster analysis yielded two distinct cluster groups. Cluster One: Voices and Thought Delusions, and Cluster Two: Voices and Thematic Delusions. Cluster One participants showed elevated disorganized, cognitive and depressive symptoms, but not negative symptoms or excitement. This study underscores the need for expanded clinical and phenomenological research into the intersection of AVHs and delusions, including work that seeks to deconstruct conventional divisions between ostensible symptoms of perception' (hallucinations) and belief' (delusions).

Keywords

Phenomenology; Auditory Verbal Hallucinations; Delusions; Psychosis

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Introduction

Recent research suggests that psychotic experiences (PEs), including auditory verbal hallucinations (AVHs) and delusions, are more nuanced than conventionally believed. AVHs and delusions are both central and multi-dimensional symptoms found in schizophrenia spectrum disorders and other disorders with psychotic features (Lincoln, 2007; Jobe & Harrow, 2010; Rosen, Grossman, Harrow, Bonner-Jackson, & Faull, 2011). These experiences exist along a continuum spanning the general and clinical population (Johns & van Os, 2001; van Os, Hanssen, Bijl, & Vollebergh, 2001; van Os, 2014; Johns et al. 2014). A recent epidemiologic survey of the prevalence of PEs in the general population from 18 countries showed the mean lifetime prevalence of PEs was 5.8% with auditory or visual hallucinations (5.2%) more common than delusions (1.3%) (McGrath et al., 2015). Overall, 32.2% of the total population reported one lifetime PE and 31.8% reported 2 to 5 occurrences.

Traditionally, hallucinations have been understood as abnormalities of perception, and delusions as abnormalities of cognition (or belief) (Tuttle, 1902; Berrios & Markova, 2012). These types of PEs have been reinforced by recent research (Woods, Jones, Alderson-Day, Callard, & Fernyhough, 2015). Descriptive psychopathologists have long noted the presence of “silent” or thought-like AVHs, as well as AVHs with ambiguous perceptual and cognitive qualities. Some researchers have proposed that delusions of reference, control and communication may at times overlap with, or even prove to be indistinguishable from AVHs (Jones & Luhrmann, 2015 (In-Press)). Recent studies have also shown a strong association of content between AVHs and delusions in clinical population whereas the association is independent of content in the general population (de Leede-Smith & Barkus, 2013; Laroi, 2012).

Different causal pathways have been put forward to explain the relationship between AVHs and delusions. Phenomenological psychopathologists have conceptualized full-fledged/frank AVHs and delusions as downstream products of more fundamental disruptions in basic sense of self, believed to involve multiple systems (e.g. proprioception, sensation, perception) (Sass & Parnas, 2003, Nelson, Whitford, Lavoie, & Sass, 2014, Sass, 2014). Others have proposed that delusions often, arise as patients’ explanations and interpretations of bizarre or inexplicable sensory and/or perceptual anomalies (David, 2004; Maher, 2006; Hoffman, Varanko, Gilmore, & Mishara, 2008; Moritz & Laroi, 2008).

Historically, some forms of AVHs and delusions have been considered more pathognomonic of schizophrenia spectrum psychoses than others, including passivity symptoms (including thought insertion and thought withdrawal), ontologically bizarre delusions, and conversing AVHs or AVHs that provide running commentaries on a patient’s thoughts and/or actions (Liddle, 1987; Slade & Bentall, 1988; Peralta & Cuesta, 1999). Paranoid delusions are also often considered distinct from other defined beliefs. From an etiological perspective, childhood sexual trauma has been more specifically linked to AVHs, while childhood attachment problems have been more strongly linked to delusions (Bentall, Wickham, Shevlin, & Varese, 2012; van Nierop et al., 2014; Longden, Sampson, & Read, 2015).

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Prognostically, Van Os and colleagues (2014), suggest that outcomes are worst for those with co-occurring AVHs and delusions versus only AVHs or only delusions (van Os, 2014).

While recent efforts have certainly turned toward the investigation of the relationship between AVHs and delusions, additional research is needed which focusses on phenomenologically complex and nuanced interrelatedness. To advance the area of phenomenology of voices and their interrelatedness to forms of delusions in participants with psychosis, we investigated the following questions:

1. What is the prevalence of co-occurring AVHs and delusions in schizophrenia compared to bipolar disorder with psychosis?
2. Are there correlations between AVHs and forms of delusions?
3. Are there sub-categories/clusters of AVHs and forms of delusions that are distinct and identifiable and what is the symptom presentation of these sub-categories/clusters?

Methods

This study reports the analyses from a novel investigation into the intercept of AVHs and forms of delusions. The term “intrasubjectivity” used throughout this study is in reference to the intercept between voices and various types of delusions that are experienced within self. The sample was recruited from a large urban university medical center, private referrals, and community treatment facilities. The total sample were administered the Structured Clinical Interview for DMS Disorders (SCID-IVtr) and the Positive and Negative Syndrome Scale (PANSS) (Kay, Fiszbein, & Opler, 1987; First, Spitzer, Gibbon, & Williams, 2002).

Subjects

Ninety-two persons experiencing psychosis participated in the study. Inclusion criteria included participants between the ages of 21 – 60 who met criteria for schizophrenia or bipolar disorder/psychosis. Exclusion criteria included substance dependence, seizure disorders, and neurological conditions. Demographic characteristics and duration of untreated psychosis (DUP) were obtained at the study evaluation. DUP was defined as the number of months between onset of psychosis and initiation of antipsychotic medication. IQ was estimated using the 2-subtest version of the Wechsler Abbreviated Scale of Intelligence (WASI) (Wechsler, 1999). The study was approved by the University IRB, and signed consent was obtained prior to initiation of study procedures. Consensus diagnoses were determined by the clinical and research team using the SCID, and available collateral information. Of the 92 study-eligible participants, 59 (64%) were diagnosed with schizophrenia and 33 (36%) were diagnosed with bipolar disorder/psychosis.

Measures used to assess the phenomenology of voices and forms of delusions

Clinical measures for this study included the SCID and PANSS. The evaluation of AVHs and forms of delusions were based on the SCID and scored as absent (score of “1”), subthreshold (“2”) and threshold or present (“3”). The SCID includes an assessment of AVHs, including voices conversing, voices commenting, and forms of delusions such as

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referential, persecutory, grandiose, somatic, religious, guilt, jealous, erotomanic, control, thought insertion, thought withdrawal, and thought broadcasting.

PANSS was scored along a continuum of severity between one (asymptomatic) to seven (extreme symptom severity). Analysis was conducted via data reduction strategies guided by prior empirical studies of symptom domains assessed by the PANSS (Kay et al., 1987). Scores were calculated for five-factors: Positive symptoms (delusions, grandiosity, suspiciousness/persecution, unusual thought content), Negative symptoms (blunted affect, emotional withdrawal, poor rapport, passive/apathetic social withdrawal, lack of spontaneity and flow of conversation, and active social avoidance), Cognitive Disorganization (conceptual disorganization, difficulty in abstract thinking, mannerisms and posturing, disorientation, and poor attention), Depression (somatic concern, anxiety, guilt feelings, depression, and preoccupation) and Excitement (excitement, hostility, tension, and poor impulse control). Items were pooled in this way based on previous factor analytic findings (Lindenmayer, Bernstein-Hyman, & Grochowski, 1994; Lehoux, Gobeil, Lefebvre, Maziade, & Roy, 2009).

Data Analyses

Demographic data were analyzed using Fisher exact tests and analyses of variance (ANOVA). For ANOVAs that yielded significant results (alpha level <0.05), Newman-Keuls post hoc tests were used to identify significant pair-wise group differences. A diagnostic comparison of the prevelance of AVH and delusions were analyzed using 2×3 Chi Square test. Bivariate Spearman's correlations were conducted to determine separate associations between voices and forms of delusions. Two-step cluster analyses using were conducted to identify distinct sub-categories of voices and forms of delusions followed by independent sample t-test to compare PANSS 5-factor scores between identified subgroup clusters. All analyses on symptoms utilized SCID data other than PANSS data that was utilized to compare symptoms between identified subcluster groups.

Results

Descriptive characteristics

Group comparisons of demographic characteristics show a significant sex difference between diagnostic groups, with the schizophrenia group including more male participants compared to the bipolar disorder group ($p<0.05$, Fisher's exact test). There was no significant difference between diagnostic groups in race, current age, age of onset of psychosis, duration of untreated psychosis, IQ, or years of education.

Figure one shows the prevalence of AVHs alone (n=2), co-occurring AVHs and delusions (n=81), and delusions alone (n=9) by diagnostic group. Group comparisons of prevalence of co-occurring AVHs and delusions show a significant diagnostic difference between groups, with increased prevalence of co-occuring AVH and delusions within the schizophrenia group ($X^2(1, N=92)=11.47$, $p<0.001$).

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Phenomenological Characteristics of Voices and Delusions

To better understand the relationship between AVHs and forms of delusions in psychotic disorders we conducted a bivariate correlation. AVHs were strongly correlated with specific forms of delusions (Table 1). Regardless of diagnosis, there was a significant positive correlation between AVHs and delusions of reference, persecution, control, thought insertion, thought withdrawal and thought broadcasting. However, no significant relationship was found between AVHs and grandiose, somatic, religious, guilty or jealousy-themed delusions.

To identify specific sub-types we conducted two-step cluster analysis that consisted of preclustering and standard hierarchical clustering algorithm of SCID items pertaining to voices and delusions (Zhang, Ramakrishnon, & Livny, 1996; Chiu, Fang, Chen, Wang, & Jeris, 2001). The analysis yielded two distinct cluster groups. Cluster One: Voices and Thought Delusions, consisted of 54 individuals (59%) and Cluster Two: Voices and Thematic Delusions, consisted of 38 subjects (41%). Diagnostically, the Voices and Thought Delusions cluster consisted of 41 participants with schizophrenia and 13 participants with bipolar disorder/psychosis. Voices and Thematic Delusions consisted of 18 participants with schizophrenia and 20 participants with bipolar disorder/psychosis, which yielded a significant diagnostic difference between clusters ($p<0.008$, Fisher's exact test); showing a higher percentage of participants with schizophrenia in the Voices and Thought Delusions cluster. There was no significant demographic difference between cluster groups in sex, race, DUP, age of onset of psychosis symptoms, current age, IQ, years of education. The primary cluster predictor algorithm show that delusions of control, thought insertion, thought withdrawal, and thought broadcasting are more discrete variables in identifying cluster subtypes and thematic type delusions, such as delusions of guilt, jealousy, and erotomania were least predictive.

An independent sample t-test was then conducted to compare PANSS 5-factor subscales with Voices and Thought Delusions to Voices and Thematic Delusions. There was a significant elevation in PANSS Positive factor scores in Voices and Thought Delusions compared to the Voices and Thematic Delusions cluster; $t_{90}=3.46$, $p=0.001$. We also found significantly higher rates of PANSS Cognitive factor scores in Voices and Thought Delusions compared to Voices and Thematic Delusions clusters; $t_{90}=1.99$, $p=0.05$. Additionally, there was a significant elevation in Voices and Thought Delusions compared to Voices and Thematic Delusions in PANSS 5-factor Depression scores; $t_{90}=2.48$, $p=0.015$. There was no significant group difference in PANSS 5-factor Negative scores ($t_{90}=1.39$, $p=0.17$) or PANSS 5-factor Excitement scores ($t_{90}=4.95$, $p=0.62$). These results suggest that, participants in the Voices and Thought Delusions cluster experienced increased Positive, Cognitive, and Depressive factor scores but not Negative or Excitement factor scores.

Discussion

In this paper, we report novel findings that contribute to the understanding of the phenomenological intrasubjectivity of voices, and forms of delusions. AVHs are known to be transdiagnostic, and to exist along a continuum that are typically associated with delusions (Liddle, 1987; Allen et al., 2004; Jobe & Harrow, 2010). Building on findings that AVHs

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exist along a continuum, a recent study demonstrated that psychotic experiences, including hallucinations and delusions also exist as a continuum of variation in dimensions (McGrath et al., 2015). In fact, a recent re-examination of teachings by Kraepelin, Engstrom & Kendler, noted that Kraepelin underscored difficulties of clearly differentiating distinct diagnostic categories and suggested that dementia praecox and manic-depressive illness should be understood as a psychopathological continuum (Kraepelin, 1893; Engstrom & Kendler, 2015). In keeping with the continuum hypothesis, studies have also explored underlying neural correlates of inner speech and auditory hallucinations that suggest similar neural substrates are activated (Bentall, 2003; Jones & Fernyhough, 2006; Alderson-Day et al., 2015).

There are multiple hypotheses put forward regarding pathways of AVHs and delusions, though a full account for these experiences must involve an integration of social, psychological and biological factors as factors contributing to the pathogensis of psychosis. It has been hypothesized that AVHs and delusions may result from a core disturbance of basic self (Sass & Parnas, 2003; Parnas, Handest, Jansson, & Saebye, 2005; Nelson, Parnas, & Sass, 2014). The manisfestitation of self-disturbance consist of subclinical disturbances in thinking, perception, sensations, affect, and sense of control (Gross, Huber, Klosterkotter, & Linz, 1987; Gross, Huber, Klosterkotter, & Linz, 2008; Parnas et al., 2005). Self-disturbances can be further linked to biological changes in brain function (Badcock, 2015). In some case, the trajectory from core disturbances to AVH consists of a progression from perseveration on thoughts into audible thoughts that can then lead to the development of Schneiderian First Rank AVHs (Klosterkotter, 1992; Sass & Parnas, 2003; Laroi & Woodward, 2007). It has been hypothesized that the formulation of delusions may represent an extension of the individual's process of attributing meaning to basic alterations and abnormalities of perceptual experience (Allen et al., 2004; Holt & Tickle, 2015; Bortolotti & Broome, 2008;; Handest, Klimpke, Raballo, & Laroi, 2015). These changes in perception and/or diminution of sense of boundary between self and others characterize a subset of Schneiderian FRS that share the experience of passivity in AVHs (voices conversing or voices commenting) and/or delusions (thought insertion, withdrawal or broadcast, and control) (Frith, Blakemore, & Wolpert, 2000; Waters, Badcock, Dragovic, & Jablensky, 2009). Our data cannot directly support a theory of 'progressive symptom development' which would require a measurement of a coordinated sequence of subjective experiences of the pathological sequela of temporal unity disturbance. Whereas, our data analyses with SCID items actually are (lifetime symptom presence without any temporal onset or simultaneous occurrence information). However, our analyses do support a non-temporal-specific disorder of self.

Self, voices and thought/thematic delusion subtypes

The significant correlations we identified between voices and specific forms of delusions such as thought or thematic delusions supports claims of an intrasubjective relationship between voices, and delusions grounded in the merging or confusion of self/other and internal/external boundaries (Waters & Badcock, 2010; McCarthy-Jones, Krueger, Laroi, Broome, & Fernyhough, 2013; Humpston & Broome, 2015; Jones & Luhrmann, 2015 (In-Press); Rosen et al., 2015). While AVHs are conventionally understood as "hallucinatory"

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and delusions as “cognitive,” our analyses provisionally support a reframing of AVHs and thought delusions as endpoints on a shared continuum of attenuated sense of basic self (Schneider, 1959; Jaspers, 1963; Conrad, 1997; Sass & Parnas, 2003; Sass, 2010; Sass, 2014). Within this disturbance, aspects of agency, authorship, and mineness are experienced as foreign, not self-generated and with absence of intentionality (Laroi & Woodward, 2007; Vosgerau & Voss, 2014).

Our study also found two distinct clusters of AVHs and forms of delusions: AVHs paired with thought delusions (Cluster One) and AVHs paired with thematic delusions (Cluster Two). These clusters begin to disentangle the intrasubjectivity of voices and delusion by characterizing Cluster One: AVH and Thought Delusions as a structure that centers on alterations of self and internal/external boundaries, while Cluster Two: AVH and Thematic Delusions centers on exaggerated processes of social internalization (guilt) or externalization (jealousy/delusions of infidelity). Phenomenological psychopathologists have long contended, we found that participants with schizophrenia spectrum disorder were more likely to fall into Cluster One: AVH and Thought Delusions and those with bipolar psychosis into Cluster Two: AVH and Thematic Delusions. Nevertheless, neither group was diagnostically pathognomonic. Cluster One: AVH and Thought Delusions participants also showed elevated disorganized, cognitive and depressive symptoms, but not negative symptoms or excitement. Future research would be needed to further unpack whether these differences in severity are tied to diagnosis (schizophrenia versus bipolar) or more strongly to predominant pattern of delusions (Rosen et al., 2012; Wallwork, Fortgang, Hashimoto, Weinberger, & Dickinson, 2012; Rodriguez-Jimenez et al., 2013).

Intrasubjectivity and Clinical Implications

Clinically, study findings underscore the need for greater attention to the nuances of experiences conventionally divided up into AVHs and delusions, particularly when this distinction is framed as a difference between symptoms of perception versus belief. While our project did not explicitly query participants as to their perception of the validity of this distinction recent qualitative work (Jones & Luhrmann, 2015 (In-Press); Woods et al., 2015) suggests that, even at a conscious, subjective level, conventional divisions between AVHs and delusions may be perceived as misleading and/or inaccurate by patients. If the AVHs versus delusions distinction does not hold either conceptually or experientially—at least for some portion of patients--the psychotherapeutic implications are also significant given that tailored treatments (including specialized forms of CBTp) often target AVHs specifically or delusions. Potential problems with mono-symptom approaches are further highlighted by the high prevalence of co-occurring AVHs and delusions (Kingdon & Turkington, 1994; Chadwick, Birchwood, & Trower, 1996; McCarthy-Jones et al., 2014). Going one-step further, we might also conjecture that in cases where a common underlying alteration (such as attenuated ego boundaries) drives both AVHs and delusions, this underlying problem may represent a more valid clinical target. Thus, a detailed assessment of the phenomenology of self, voices, and thought or thematic delusions may help to provide information needed to develop a tailored, multipronged clinical intervention that addresses the complexities and interrelatedness.

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Limitations

There are limits to the generalizability to these results in that the data are based largely on self-report. Additionally, although the primary focus of this study was not DUP, our finding of no diagnostic difference cannot be generalized. Our sample is unique in that it represents primarily an African American population; whereas many studies examining DUP typically represent Caucasian or heterogeneous populations and some studies do not report race.

Concluding Comments and Future Directions

In summary, this novel phenomenological study of self, voices and delusions suggests a significant relationship between voices and delusions of reference, persecution, control, thought insertion, thought withdrawal and thought broadcasting. The overwhelming majority of our participants reported both AVHs and delusions. We also provide preliminary support for differentiation of patients into subgroups characterized by the intersection of Voices and Thought Delusions versus Voices and Thematic Delusions. While both clusters implicate alternations of self-other experience, they do so in distinct ways: the former involving Schneiderian symptoms of passivity or confusion over ownership and internal versus external genesis of thoughts and the latter exaggerated projection and introjection. This study underscores the need for expanded clinical and phenomenological research into the intersection of AVHs and delusions, including work that seeks to deconstruct conventional divisions between ostensible symptoms of perception' (hallucinations) and belief' (delusions).

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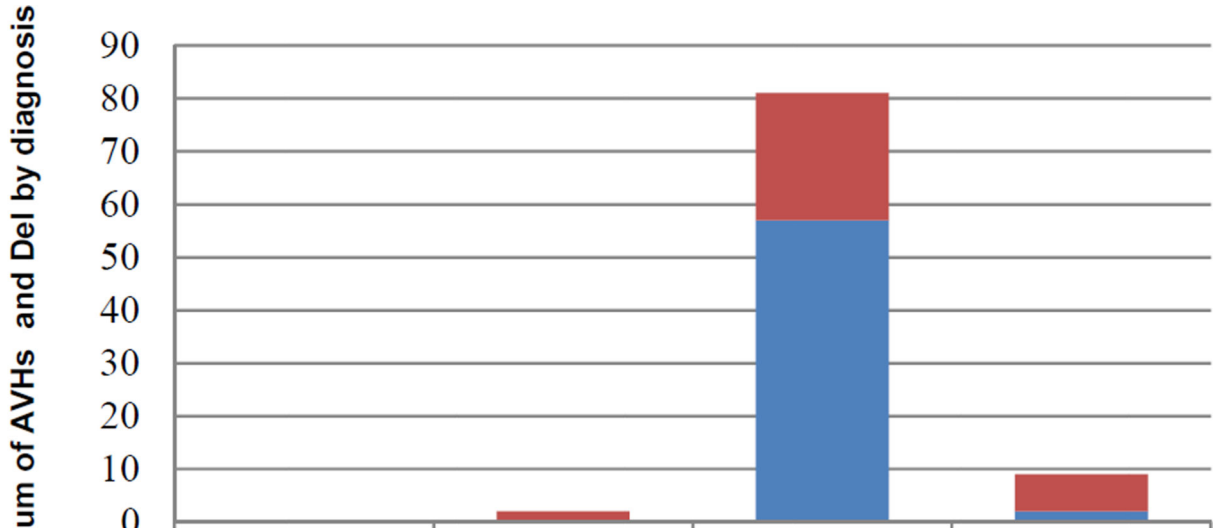

	No AVHs & No Del	Yes AVHs & No Del	Yes AVHs & Yes Del	No AVHs & Yes Del
Bipolar	0	2	24	7
Schizophrenia*	0	0	57	2

Figure 1. Auditory Verbal Hallucinations & Delusions Interrelatedness

The comparison of auditory verbal hallucinations and delusions in participants with schizophrenia in comparison to participants with bipolar with psychosis.

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Table 1

Correlations between AVHs and forms of delusions

Spearman Correlations between auditory verbal hallucinations and forms of delusions.

Variables		1	2	3	4	5	6	7	8	9	10	11	12
1.	**Voices**	~											
2.	Delusions of reference	**0.50*****	~										
3.	Persecutory Delusions	**0.52*****	0.33**	~									
4.	Grandiose Delusions	**0.11**	0.19	0.02	~								
5.	Somatic Delusions	**0.16**	0.25*	0.06	0.02	~							
6.	Religious Delusions	**0.17**	0.31**	0.20	0.48***	0.01	~						
7.	Delusions of Guilt	**0.14**	0.14	0.13	0.15	0.19	0.20	~					
8.	Jealous Delusions	**0.15**	0.16	0.07	0.06	0.14	0.09	0.63***	~				
9.	Erotomanic Delusions	**0.15**	0.16	0.07	0.23*	0.11	0.24*	0.30**	0.48***	~			
10.	Delusions of being controlled	**0.35*****	0.42***	0.22*	0.22*	0.21*	0.37***	0.14	0.14	−0.02	~		
11.	Delusions of thought insertion	**0.29****	0.38***	0.15	0.24*	0.14	0.37***	0.19	0.20	0.05	0.85***	~	
12.	Delusions of thought withdrawal	**0.27****	0.31**	0.28**	0.18	0.25*	0.37***	−0.07	0.02	0.02	0.62***	0.49***	~
13.	Delusions of thought broadcasting	**0.26****	0.31**	0.13	0.20	0.11	0.33***	0.05	0.01	0.08	0.53***	0.43***	0.28**

* $p<0.05$,

** $p<0.01$,

*** $p<0.001$.