

Voice Quality, Pragmatics and Psychosocial Functioning in Schizophrenia: An Exploratory Study

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Few studies have dealt with the relationship between psychopathology and voice (Tolkmitt et al., 1989; Wallbott, 1989), but it has been suggested (Todt & Lowell, 1980; Andreason et al., 1981; Leff & Abberton, 1981; Stein 1993; Louth et al., 1998) that voice quality in Schizophrenia can be an important indicator of diagnosis.

Nine adult male patients diagnosed with Schizophrenia, were recorded onto a Sony-MZR35 minidisk. Portions of their speech samples were presented to three Speech and Language Therapists to perceptually evaluate the voice quality based on the GRBAS scale. Results were related to data collected using the Pragmatics Protocol, the Global Assessment of Functioning (GAF), and acoustic parameters.

Spearman's correlation coefficients calculated between the Pragmatics Protocol and GAF presented high correlations (verbal aspects: $\rho=0.869$, $p<0.05$; non-verbal aspects: $\rho=0.941$, $p<0.05$; total score: $\rho=0.957$, $p<0.05$) with the exception of paralinguistics aspects ($\rho=0.665$, $p>0.05$), indicating that these two scales are strongly related. Spearman's correlation coefficients calculated between GRBAS scale and GAF and between the selected acoustic parameters and GAF showed low and not statistically significant correlations, respectively.

Most (six) patients showed slight to moderate dysphonia. Results showed highly irregular patterns of voicing and F0 histograms presented two modes of vocal fold oscillation for five patients. Median F0 values (96-139 Hz) were higher than those that characterise a creaky phonation (7-78 Hz), previously used to describe voice quality in Schizophrenia. Standard deviations of F0 were extremely high (55-104 Hz) for three speakers, and jitter (1-3%) and shimmer (11-23%) values were well above what is considered to be normal. Jitter values are within the ranges that are typical for depressed and near-term suicidal patients (Silverman et al., 2006). Considerable variations in F0 (jitter) and amplitude of the speech signal (shimmer), were observed in our data, and could be used as indicators of levels of anxiety.

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