The thought of deafness and schizophrenia combined may sound strange or maybe even like a stigma considered to be a lost cause and the lack of research doesn't help, but there are some alternative hypotheses researchers have come up with in the past two decades offering some insight into this phenomena. There are actually a considerable amount of deaf people with schizophrenia compared to their hearing counterparts who also have schizophrenia. Researchers have been plagued with the question of whether the 'voices' described by those born profoundly deaf are actually auditory or if there are other perceptual forms of hallucinations that occur in deaf people. The several hypotheses are as follows: subvocal misinterpretations, visuomotor representations of speech, and that deaf people may actually see a manifestation of someone signing to them or are in a hallucinogenic situation where they may see someone speaking and are able to lipread the message being delivered. To clarify, subvocal is defined as, "To articulate or engage in articulation by moving the lips or other speech organs without making audible sounds, as in reading to oneself" (http://www.thefreedictionary.com/subvocalize). Since those who are deaf are not particularly inclined to speech, they may apply the subvocal thoughts to a so-called manifestation of voices which leads to the wrong idea that a deaf person may have schizophrenia. This is a common reason for misdiagnosis. For those who may actually have hallucinations, some researchers believe that deaf people may actually experience visuomotor representations of speech, such as; depending on sight for motor function activities like, writing, for example. One must see print in order to write down a piece of information. This theory involves those who are deaf in seeing someone who is signing to them or as if they are lip reading during a hallucination in order to make out what is being said.

There are several variables to consider when interviewing a deaf person who is inflicted with schizophrenia: the degree of hearing loss and the age of onset of their deafness, the use of residual hearing, the age their first language was acquired, the differences in language exposure and fluency among those who are deaf and schizophrenic, their parental hearing status, and the educational placement they have or may have had growing up such as; oral or signing environments. These variables cause heterogeneity among deaf people who may have schizophrenia which can be an issue in collecting data, hence issues pertaining to documenting any hard evidence on the matter. Another variable, unrelated to the deaf people themselves, would be something known as the 'investigator effect'. This is when the researcher is lacking the appropriate knowledge of or experience of the deaf individual's world view, sign language skills to be able to communicate with the deaf individual, as well as the lack of experience as someone who experiences hallucinations. If an interpreter is used, a new difficulty emerges, one in which the interpreter is able to correctly interpret the deaf individual's descriptions of what hallucinations may be like for them. Then the researcher has to make their own interpretations of what the deaf person is experiencing in order to document the information provided through an interpreter. These are all contributing factors in the difficulty of research regarding deafness and schizophrenia combined.


Another article states that frequency of schizophrenia among the deaf is strikingly similar to what is found among the hearing, however, this is not to be confused with the frequency of hallucinatory experiences in the profoundly, prelingually deaf, which does differ from the frequency of hallucinatory experiences of hearing individuals. Three deaf patients described non-auditory modes of communication such as; writing on the wall and sign language. These types of hallucinations are referred to as visuo-verbal hallucinations. It is important to note that voice hallucinations seemed to differ among deaf patients, but seemed to occur more frequently than visuo-verbal hallucinations did, meaning that voice hallucinations took place more often than a hallucination in sign language. "If sign language is learnt, even though the means of communication is visual, the left hemisphere becomes dominant - presumably reflecting the linguistic nature of the task" (p. 544, Critchley). This may offer an explanation as to why deaf patients hear auditory messages when they are experiencing a hallucination. Hearing people on the other hand can hear anything from mumblings to clear speech messages and are usually spoken to in third person during a hallucination. Researchers believe that hallucinations in deaf and hearing individuals are chemicals reacting in the temporal lobe. Here is an explanation of how a hallucination occurs; "...auditory hallucinations in schizophrenia are accompanied by activation of the muscles of phonation reflected in most cases by electromyographic activity and in some by actual subvocal speech" (p. 543).

A major issue in the case of auditory versus visuo-verbal hallucinations in prelingually deaf people is that spoken language among profoundly deaf individuals is limited; therefore, when a profoundly deaf person is deemed as having a psychiatric problem, they are cast off as an "isolate," meaning someone who is considered difficult to speak to through a mutual method of communication. With that said, researchers in this particular study took hallucinatory experiences described by deaf patients with a grain of salt. Patients who described a so-called auditory hallucination were not accepted without further questioning as to how and what transpired during a hallucination in the auditory sense. There were quite a few deaf patients who, when asked to explain the phenomena actually mentioned that hallucinations didn't manifest as sign or speech per say. Just one patient said that she was unsure how she heard voices. Others were sure they "heard" and did not lipread while hallucinating. They all placed emphasis on finger-spelling "heard" (p. 543).


The more people understand about schizophrenia, the closer we come to helping someone who is deaf and schizophrenic. A thought that came up was that if we had a deaf expert and a psychiatrist, we may learn better how to help deaf people who are inflicted with this mental illness. What would be even better were if the skills of these two qualified people came together in one person. There aren't enough deaf people who are doctors and can help others who have schizophrenia, but also there aren't enough deaf experts, hearing or deaf, who are psychiatrists as well as deaf experts. Even if there was a doctor/psychiatrist who could sign, then that would be better than going through a third person. This could help to eliminate the investigator effect and then the doctor/psychiatrist could communicate with the patient themselves instead of through an interpreter. These are just some thoughts on the matter. Here's to hoping we can come one step closer to resolving the issues brought up in the two articles discussed here.

**Other Resources Regarding Schizophrenia:**