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Title: TeleMedicine Improves Migraine Care Quality: Results of a Pilot TeleHeadache Program

Category: Clinical Studies

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Background:

Migraine specialists provide optimal, world-class care but are not readily available to a large portion of the population. Telemedicine is a proven method for providing high quality care across various ambulatory domains, but there is a paucity of research evaluating its benefits for migraine care. It is possible that providing migraine care via TeleHeadache increases the likelihood of a patient receiving care consistent with evidence-based guidelines. The current study tested whether patients who received migraine care via TeleHeadache were more likely to be prescribed/recommended medication consistent with published acute and preventative evidence based guidelines relative to matched controls from the same geographic area who received migraine care from a local provider.

Methods:

This prospective, observational study compared patients (n=31) with an ICD-9 diagnosis of migraine living more than 2 hours from a migraine specialist and received migraine care via Mercy Virtual TeleHeadache to a matched cohort (n=200) who received care locally from a Mercy physician (Local). Comparisons were made for the patient's first migraine encounter. Medications were labeled as being evidence-based if the medication has been designated as Level A or B in published guidelines for acute and preventative migraine care. The patient's Mercy Epic EHR served as the sole data source. Variables assessed included migraine diagnosis, headache frequency per month, acute and/or preventative medications taken prior to and prescribed/recommended at the visit, gender, age, race, and 3-digit zip code. Hierarchical logistic regression (LR; controlling for clinical and demographic factors) compared the likelihood of a patient being prescribed/recommended evidence-based acute medication based on whether they received care via TeleHeadache or from a local provider. Chi-square analyses compared the likelihood a patient being prescribed/recommended evidence-based preventative medication based on treatment delivery location among those with eight or more headaches per month. Data were analyzed using SPSS v 21.

Results:

Overall, 77.4% of those who received migraine care via TeleHeadache were prescribed/recommended evidence-based acute medication versus 27.0% of those who received care locally. Step 1 of the LR considered all covariates in the model and was significant (Step $\chi^2 = 45.87$; $p < .001$) but taking an evidence-based medication prior to the visit (Wald = 15.78; $p < .001$) was the only significant covariate. Step 2 of the LR added care delivery method (TeleHeadache vs Local) and was significant (Step $\chi^2 = 23.88$; $p < .001$) with those receiving care via teleHeadache being significantly more likely to be prescribed/recommended evidence-based acute medication (Wald = 20.73, $p < .001$, $\exp(B) = 11.63$, 95% CI = 4.03-33.20). Among those who needed preventative medication, those who received migraine care via telemedicine were prescribed/recommended evidence-based migraine preventative medication (76.0%) significantly more often than those who received care from a local provider (23.1%; $\chi^2 = 14.28$, $p < .001$; $\Phi = .53$)

Conclusion:

The findings from the current study suggest that delivering migraine care via Mercy TeleHeadache significantly improves the patient's likelihood of being prescribed acute and preventative medication consistent with evidence based guidelines. Given its portability and scalability, telemedicine offers the possibility of expanding the reach of providers who can deliver world-class migraine care regardless of the patient's location.