



MAXout innovative outpatient treatment found highly effective for children with autism

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Participants in the MAXout study were divided into groups of four kids with

two clinical staff members to complete their sessions, which included a mixture of skill instruction and therapeutic activities. Photo provided by Marcus Thomeer

Researchers at the Institute for Autism Research at Canisius College have concluded a four-year clinical trial of an innovative outpatient treatment called MAXout, which they have determined to be highly effective for high-functioning children with autism spectrum disorder.

MAXout was the third treatment variation in a series of programs that have been tested over the course of the

past 20 years. Chris Lopata, Psy.D., and Marcus Thomeer, Ph.D., are co-authors of the recently published study as well as co-founders of the Institute for Autism Research at Canisius and have been working for the past two decades on a variety of treatment programs that focus not only on the behavioral aspect of autism symptoms but also on the cognitive aspect.

“Many of the earlier behavioral students just targeted behaviors alone, and they failed to address the social/cognitive part, social understanding and social knowledge,” Lopata said. “We’re trying to do both

simultaneously ... Which is why our program is designed for the subgroup of kids with autism that have relatively intact cognitive and language ability.”

IAR researchers began by developing one of the first comprehensive treatments for children with autism spectrum disorder in a summer program format called summerMAX. After the effectiveness of the summer program was supported by several clinical trials, researchers adapted the program to a school-based treatment called schoolMAX. Following a large-scale clinical trial, researchers found the method to be highly

effective for school children with autism spectrum disorder.

After observing how effective the treatment was for both the school and summer based programs, the next step for researchers was to adapt the treatment to an outpatient model and then test its effectiveness.

“We saw that in both of those formats, the kind of key ingredients of the treatment were really effective in a summer program format then in a school program ... and may also be a viable outpatient program,” Lopata said.

“And that’s when we studied the MAXout program over the past four years.”

During these past four years Lopata, Thomeer and their team of researchers at the IAR have been studying the efficacy and feasibility of the outpatient-model MAXout, which has led to the recent conclusion of their large-scale clinical trial.

In the MAXout clinical trial, 88 children between the ages of 7 and 12 years old with autism spectrum disorder were randomly assigned to either the MAXout treatment

group or the wait-list control condition. The children in treatment were divided into groups of four, with two clinical staff members.

The MAXout treatment consists of two 90-minute sessions per week over 18 weeks, and each session includes two 45-minute treatment cycles.

“There’s two parts that go on in a treatment cycle: The first is skill instruction and the second is therapeutic activity,” Lopata said. “In the skill instruction, we’re going to target social skills, face emotions and non-literal

language skills. And then in the therapeutic activity, we target those same areas but we also target interest expansion.”

During the sessions, treatment was delivered using a mix of direct instruction, modeling, role-play, feedback and repeated practice. Researchers also utilized a behavioral system to increase positive social behaviors and reduce autism symptoms and negative behaviors while providing parent education. Researchers would teach the students a skill, model it for them, then have the students act it out and provide corrective feedback

and guidance, and then have students repeat the skill.

In the MAXout program, participants are taught 30 different social skills. An example of a social skill that is taught throughout the program is emotion recognition, which is beneficial because kids with autism have great difficulty reading nonverbal cues and relating to their peers when they do not understand the emotion their peer is expressing.

“It’s not just the words that we use; it’s how you say it. And so it’s getting them to understand that people’s

expressions, as well as their own, have meaning and can impact your social interaction,” Thomeer said. “We work on identifying social cues, identifying different emotions and how they’re displayed, identifying how your body feels and reacts to different situations. For the social dance, those are critical skills to be able to kind of adjust.”

The program also tackles idioms and helps students understand that not every phrase is meant to be taken literally and how to decipher what someone means.

“Kids with autism tend to take things very literally. So, idioms like, ‘it’s raining cats and dogs’ – many of our kids might know that doesn’t mean that cats and dogs are coming from the sky, but that’s an example of how they’ll be confused by some phrases that we say,” Thomeer said. “We’re not just trying to have them memorize a bunch of idioms, but we’re trying to get them to understand that when they come into a situation where they hear something that doesn’t make sense, that there must be an alternative meaning.”

To track participant progress, outcomes were assessed

prior to the start of treatment, immediately following the 18-week treatment, and again four to six weeks post-treatment for children in both groups. Assessing outcomes several weeks post-treatment was crucial in understanding the longevity of the treatment outcomes.

“We saw these significant gains right after the 18-week treatment from the baseline to the 18-week point,” Lopata said. “We found that a month and a half after treatment had stopped, they still maintained all of the significant gains that they had right at the end of treatment. Which is really a positive thing for us and the

kids.”

The study results revealed that children with autism spectrum disorder who received the MAXout treatment exhibited significantly greater improvements in their social cognitive skills. Additionally, the improvements were all maintained four to six weeks post-treatment, showing a longevity to the treatment results.

The main focus of MAXout was to create a treatment model that addressed the need for treatments that are adaptable and effective across settings. The adaptability

of the model from summerMAX to schoolMAX to MAXout shows the versatility and effectiveness of the model to treating symptoms of autism spectrum disorder.

In addition to these programs, researchers have also used the COVID-19 pandemic as an opportunity to pilot-test the feasibility of a telemedicine version of their next treatment version, called the homeMAX model.

“No one wishes this pandemic on anybody, but with all these families being at home and even those that are getting school instruction, a lot of it is online, and they’re

not getting a lot of the services that they typically get,” Thomeer said. “In this homeMAX program, we are using the same methodology and components that we do in the summerMAX, schoolMAX and MAXout, where the parents are running a social skill group, an intensive skill instruction group and then they’re doing a therapeutic activity.”

So far, Thomeer and Lopata are pleased to see that not only are parents able to complete the 30-minute sessions three times a week for eight weeks effectively but that they enjoy it as well and appreciate having a set

way to be able to help their child.

“We found the feasibility that the people who would be doing it can implement it and like it,” Lopata said. “There was a lot of training on the front end to get parents up to speed so they feel confident. But then as they’re doing it more and more with the kids and they can see how accurate they are and they can see changes in the kids, that’s very empowering for the parents.”

Currently, Lopata and Thomeer are working on progressing homeMAX to the next step, which would

include a larger-scale clinical trial, but are also working on disseminating the resources and information they already have to others to be able to use.

“Based on the three programs that we’ve studied, we want to try and get the programs that we’ve shown to be productive out into broader use,” Lopata said. “We’re happy to give it away for free... but practitioners are not visiting our website. So, one thing is to explore how we get this out to practitioners, to schools, to clinicians, to therapists to be able to use this.”

IAR is always doing programs. Those who are interested in learning more about a particular program or interested in signing up to participate in one can call IAR at 888-2800 or visit their website at www.canisius.edu/academics/our-schools/school-education-human-services/institute-autism-research.

“Money will never be a reason that we don’t help families. Even though this is empirically validated treatments, we always do a sliding scale,” Thomeer said. “We’re not in it for the money. We want to make sure that what we’re doing makes a difference, so money will

never be a reason we can't serve."

The complete findings from the outpatient clinical trial were just published in the Journal of Clinical Child and Adolescent Psychology. The MAXout study was funded by U.S. Department of Defense grant W81XWH-15-1-0195.

IAR is an interdisciplinary, collaborative research center dedicated to understanding autism spectrum disorder and enhancing the lives of those affected and their families. Researchers from diverse backgrounds work together to address critical questions involving causes,

development, assessment, clinical treatment and education.

For more information regarding the MAXout program, the other MAX programs, and/or the Institute for Autism Research at Canisius College, visit www.Canisius.edu/iar or call the IAR at 888-2800.