The Impact of School-based Cognitive Behavioral Therapy on High School Dropout Rates in Mexico

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Sector(s): Education

Location: Mexico City, Mexico

Sample: 5,274 students from 20 schools

Target group: Secondary schools Students

Outcome of interest: Dropout and graduation Student learning Cognitive development Socio-emotional development

Intervention type: Cognitive behavioral therapy Psychosocial support

Partner organization(s): Mexican Secretariat of Public Education, World Bank

Educational attainment in low-and middle-income countries is important in determining future success. Dropouts are most pertinent at the secondary school level, when students can decide on their own to leave school, raising questions on adolescents' abilities to make such critical choices. In Mexico, researchers evaluated a math tutoring intervention and a cognitive behavioral therapy-based (CBT) program that aimed to encourage students to slow their decision-making processes and to improve academic readiness for secondary school students at risk of dropping out. The study found mixed effects on socio-emotional skills among students, and no effect on math test scores, though take-up was limited.

Policy issue

Educational attainment in low- and middle-income countries is important in determining future success. In these countries, school dropout rates are often influenced by income constraints, institutional structures, and parents' and teachers' behaviors. School dropouts most frequently occur at the secondary school level when students are able to decide to leave school. This raises questions on adolescents' abilities to make such critical decisions on their own—with still-developing brains, these students may struggle to link choices and consequences, prioritize decisions with immediate rewards, or be susceptible to peer pressures. Dropping out of school, as an example, to take a low-skill job and earn cash, is tempting to students at the moment but difficult to reverse and can have lasting impacts on wages, mobility, and welfare.

What types of interventions are likely to have the greatest effect on this type of decision-maker? Is it possible to achieve not just improved decisions, but improved decision-making? And can psychological and socioemotional skills be taught? In attempting to answer these questions, researchers evaluated a program based on cognitive-behavioral therapy (CBT), which aimed to encourage students to slow their decision-making process and improve academic readiness, in secondary school students in Mexico.

Context of the evaluation

Although Mexico has almost reached universal school enrollment rates in primary and lower secondary schools, the challenge of retaining students at the high school level remains a priority. More than 35 percent of students who enroll in high school will not graduate. Among those who do graduate, many will finish with insufficient skills — of students who graduated high school in 2015, more than half finished with insufficient achievement levels in mathematics.

School dropout most commonly occurs at the secondary school level; in Mexico in 2016, 15.5 percent of enrolled students dropped out of upper secondary school on average. Reasons for student dropouts include limited financial resources, lack of information about the future returns to education, and limited relevance of the educational content for job market outcomes.

To combat upper secondary dropout rates, the Ministry of Education in collaboration with the World Bank designed a pilot program, PODER.[1] The program targeted students in their first year of upper secondary school who were considered to be at risk of dropping out due to significant skills gaps in mathematics and socio-emotional skills. Those eligible for the program were mostly from households with lower socio-economic status, lower parent education, and with access to fewer books and household assets.



High school tutor give student one-on-one attention.

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Details of the intervention

Researchers partnered with the Mexican Secretariat of Public Education (SEP), in collaboration with the World Bank, to evaluate the impact of the PODER program on students' socioemotional outcomes, math scores, and dropout rates. PODER was designed

to improve socio-emotional skills using cognitive behavioral therapy (CBT) and incorporated a math tutoring component aimed at improving the academic readiness of students at risk of dropping out.

Researchers randomly assigned 5,274 students from twenty schools in Mexico City to one of three groups:

1. Ten CBT-based sessions of one hour each delivered over ten weeks during the first semester of EMS;
2. Twenty CBT-based sessions of one hour each delivered over the first and second semesters of EMS; or
3. A comparison group which received ten weekly math tutoring sessions of three hours each.

The socio-emotional intervention was designed by the Faculty of Psychology at the "Universidad Nacional Autónoma de México" (UNAM), and the mathematics program was designed by the Department of Educational Mathematics at the "Instituto Politécnico Nacional" (IPN). The model was inspired by the Chicago-based program "Becoming a Man (BAM)" which acknowledges that reducing upper secondary dropouts is a complex task requiring remedial actions. The CBT-based sessions aimed to influence socio-emotional skills including: interpersonal skills (e.g. assertiveness, perseverance, emotional regulation); stress management and self-control; and problem solving.

The program was conducted outside of school hours during the 2016-2017 school year, and both student and teacher participation was voluntary. Teachers administered the intervention and received training and a certificate by UNAM or IPN, with no monetary incentives. Using volunteer teachers as facilitators of the program marks a major difference from other CBT-based interventions that have been studied in the past and was adapted to test scalability and cost effectiveness of the program.

Results and policy lessons

Participation in the PODER program had mixed results among students — the evaluation revealed a limited positive effect on one of the two measures of students' socio-emotional skills and no effect on math test scores or the probability of enrolling in the second year of upper secondary school.

Limited program take-up: Researchers suggest that the possible lack of effect was due to the limited take up rate of the program—70 percent of the students who received the program did not attend any CBT sessions and practically no one attended math tutoring. The authors speculate that reasons for the low take up rates of this intervention included:

- Lack of communication about program objectives: Misunderstanding of program objectives appeared to lead to stigmatization, as participants were thought to be "problem students."
- Late program start date: The program was scheduled to begin in early September, but did not commence until mid-October at which point some students had already dropped out of school and teachers recorded limited availability.
- Use of out of school hours for the sessions: Holding sessions outside of regular school hours meant that some students who traveled from further locations were expected to travel long distances after school hours.
- Lack of incentives for participation due to the voluntary nature of the program.

Reductions in dropout: Despite low enrollment, students who attended at least two CBT sessions were more likely to enroll in the second year of upper secondary school (11th grade). For those attending five or more sessions, this probability increased by 19 percentage points (36 percent) relative to the comparison group. In the case of those who attended zero sessions, the probability of enrolling in 11th grade decreased by 9 percentage points, possibly due to stigmatization.

Changes in cognitive and non-cognitive skills: Among those who received the program, socio-emotional skills appear to have improved slightly. Results show that those who attended at least five sessions benefitted in terms of socio-emotional (non-cognitive) skills and student engagement. No effect on math (cognitive) test scores was identified as a result of the program. The researchers suggest this was likely due to extremely low attendance at the complementary tutoring sessions.

Lessons for future programming: Although the evaluation showed mixed results, accompanying fieldwork, interviews, workshops, and satisfaction surveys indicated a need for training and coaching on how to develop socio-emotional skills, not only for students but also for teachers. Lessons from the evaluation highlight the importance of a strong communication strategy to reduce the risk of stigmatization, and secondly that implementing the CBT workshops and math tutoring during normal schooling hours may be crucial for future program success.

Informed by lessons from this study, the PODER model has since been adapted and is now being piloted in Vocational Upper Secondary Schools in the State of Nuevo León. Like PODER, this intervention aims to serve underprivileged youth who are at high risk of dropping out of school. However, unlike the PODER intervention, the CBT-based program in Nuevo León is accessible to all students within each school (rather than just a random subset of students) in order to reduce potential stigma around participation.

Avitabile, Ciro, Janina Cuevas, Rafeal de Hoyos, and Julian C. Jamison. “Addressing High School Dropouts with a Scalable Intervention: The Case of PODER." World Bank Policy Research Working Paper No.9085: 1-24, December 2019. Available at SSRN: https://ssrn.com/abstract=3507833

1. PODER stands for “Programa de Oportunidades y Desarrollo para Evitar Riesgos” or translated, “program of opportunities and development to avoid risks.”