Engaging Caregivers and Youth in Side Effect Monitoring with a Responsive Website

Ajit Ninan[1,2], Laura Theall[1], Keith Willoughby[1], Naila Meraj[1]

[1] Child and Parent Resource Institute
[2] Western University

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Western UNIVERSITY · CANADA

Background

Many medications are prescribed to children based on established efficacy and safety in adults (1-4). The pediatric population is very vulnerable given that drug toxicities can be age-dependent, medications are often administered for long time periods (e.g., years), and there may be interactions between growth, development and pharmacological factors (5-6). Children may metabolize medication differently than adults, and therefore may be more likely to experience side effects. So, careful monitoring for side effects is important.

In response to this need, a physician-pharmacist team at the Child and Parent Resource Institute (CPRI) created the Psychotropic Medication Monitoring Checklists (PMMC) based on a thorough review of the literature for commonly prescribed psychotropic medications. A formal research project evaluated the impact of paper-based PMMC on CPRI direct care staff, demonstrating that the PMMC was well-received, and useful for side effect monitoring in residential care (7).

Objective

Our objective is to make the PMMC widely available on a responsive website, accessible through an app, to empower youth and their caregivers with the knowledge to monitor for possible side effects, when psychotropic medications are prescribed. This will also enable them to easily document and communicate such concerns to their physician for improved patient safety.

Engaging youth and caregivers in side effect monitoring can help to ensure that the health status of children and youth who are taking psychotropic medications is constantly monitored and documented leading to improved medication safety.

Classes of Psychotropic Medications on the PMMC

1. Medications for ADHD
   - Psychostimulants
   - Atomoxetine (Norepinephrine Reuptake Inhibitor)
   - Alpha 2 Agonist Adrenergic Agents
2. Antidepressants
   - Selective Serotonin Reuptake Inhibitor (SSRI)
   - Norepinephrine-Dopamine Reuptake Inhibitor (NDRI)
   - Serotonin-Norepinephrine Reuptake Inhibitor (SNRI)
   - Serotonin-2 Antagonists /Reuptake Inhibitor
   - Noradrenergic/Specific Serotonergic Antidepressant (NaSSa)
5. Antipsychotics
6. Agents for Treating Extrapyramidal Side Effects
7. Anxiolytics
8. Sedatives
9. Mood Stabilizers

Side effects of 53 different psychotropic medications will be included in the forthcoming App version of the PMMC

Stages of the PMMC App Project

Information Gathering
- Conduct comprehensive literature review to inform medication side effect database

App Development
- Conduct needs analysis for functionality/design of the app
- Test Pre-pilot Version and incorporate feedback for Pilot
- Conduct Pilot Project – 8 week trial assessing pre and post user awareness, beliefs and communication of side effects

Knowledge Mobilization
- Incorporate user-driven changes from Pilot Project
- Disseminate findings from Pilot Project

App Launch
- Promote use of the PMMC App:
- Develop Print Communications & Digital Products
- Deliver Education on use, utility, and benefits of the PMMC App to Ontario Child & Youth Mental Health Agencies

Resources
- Partnership between Volunteer Organization of CPRI (VOCPRI) & CPRI: Financial support from VOCPRI
- PMMC Steering Committee: CPRI Medical Director, Pharmacist, Librarian, Research Coordinators, Planning Analysts, Educators and Manager
- Collaboration with App Developer
- Volunteer Support
- Child/Youth Involvement

Current Status

Information Gathering
- Measured outcomes and collected user feedback on paper-based PMMC through survey questionnaires
- Finalized the list of medications to be added to the PMMC
- Created Logic Model to guide development and evaluation
- Preparing Ethics proposal to conduct Pilot Project
- Currently conducting comprehensive literature review to inform medication side effect database

53 Psychotropic Medications → 53 comprehensive searches performed in PubMed → 10,000+ Potential publications for analysis → Inclusion/exclusion criteria applied by Librarian & Physician review team → Final set of relevant research publications identified for detailed analysis (N=?) ; Extraneous items excluded from analysis (N=?)

App Development
- PMMC steering committee conducted brainstorming sessions with the App Developer
- Engaged and consulted with youth
- Engaged and consulted with prescribers
- Finalized PMMC App Requirements Document for App Developer to proceed with the development process
- App Developer currently designing the Pre-pilot Version

Expected Benefits

This innovative tool is expected to:
- Inspire further research and education on safe use of psychotropic medications for children and youth.
- Contribute to the evidence base regarding child/youth-specific side effects associated with psychotropic medications.
- Improve communication between patients and prescribing professionals regarding psychotropic medications and their side effects.
- Provide an efficient and portable tool to facilitate the safe use of psychotropic medications for children and youth in Ontario.

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