

Adolescents' Access to Prescription Drugs for Non-medical Use

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Abstract

Non-medical prescription drug use (NMPDU) among adolescents has recently been identified as a growing concern within Rice County, MN⁴. Research has indicated that prescription drug abuse among adolescents may act as a gateway to using more harmful drugs in the future¹. In recent years, Rice County, MN has seen an increased usage of heroin and cocaine which may be connected to prescription drug misuse⁴. Due to the neurodevelopmental stage of adolescents abusing these drugs, they are more prone to addiction². The combination of an underdeveloped adolescent brain and prescription medication abuse could lead to a lifelong struggle with drugs with altered chemical pathways and brain cell maturation. Prescription drug abuse is also associated with increased hospital visits and medical emergencies³, which negatively impacts health and may become a financial burden to the adolescent and community. This descriptive study focused on learning how adolescents access prescription drugs for non-medical use and where the supply originated. Anonymous surveys were distributed to all consenting 18+ years old students at an area high school. Data showed that a majority of the surveyed student population was aware of prescription drug misuse among their peers. While several access routes were identified, “friends” and “seller” were the most commonly indicated routes. Adolescents’ awareness of NMPDU and the identified common access routes will guide prevention efforts, policy making, and intervention strategies about prescription drug abuse for health care providers, schools, community leaders, and law enforcement⁴. These policies will benefit current and future adolescents in Rice County, MN.

Keywords: Adolescents, Prescription Drugs, Access

1. Introduction

Healthy People 2020 identified adolescent abuse of prescription drugs as an emerging health issue within our society⁹. Two models may help to explain this increased usage including: 1. An increased number of methods to access prescription medications (including from family, home medicine cabinets, friends, doctors, sellers, and potentially numerous other sources), thereby increasing their availability to adolescents¹. 2. An assumption by adolescents that prescription drugs are safer than illegal drugs⁵. Non-medical prescription drug use (NMPDU) among adolescents has also recently been identified as a growing concern within Rice County. This concern emerged from the results of the yearly Substance Abuse and Mental Health Services Administration national survey on drug use and health administered to all students by the Department of Health and Human Services¹². This survey addressed many types of drug use, including prescription medications. In 2014, survey results indicated that 8.7% of Rice County 11th graders (n=255) used prescription medications that were not prescribed to them. Nearly 40% of the students felt this usage was a moderate or less risk to those using them and 33.5% felt obtaining these medications was easy for students¹⁰. These results indicated that prescription drug misuse was a legitimate concern, therefore the Rice County Chemical Health Coalition approached the St. Olaf Nursing Department to further research NMPDU among adolescents in the county. While the national survey briefly addressed the topic, little concrete data was available regarding access routes

of prescription drugs for non-medical use among adolescents in the county. A survey was created to address this knowledge gap and to add to the evidence that prescription drug abuse among the county's youth is a growing concern.

2. Background

In order to discuss adolescents' abuse of prescription medications the acronym NMPDU needs to be defined. NMPDU (Non-Medical Prescription Drug Use) is defined as "the use of prescription medications without a prescription or solely for the feeling or experience caused by the drug⁶." As discussed in the introduction, the abuse of these medications among adolescents in the U.S. is a growing concern as the health effects of their misuse are numerous and potentially devastating. These effects will be discussed in the following paragraphs.

Prescription medication abuse can have serious health consequences, especially for adolescents. These adverse effects can range from mild symptoms such as tachycardia and diaphoresis to more serious concerns including convulsions, loss of consciousness, coma, and even death¹. Depressants, opioid and morphine derivatives, stimulants and antidepressants are the most commonly abused classes of prescription medications². Zosel studied 16,000 adolescents who intentionally abused prescription medications, 38.9% experienced minor effects, 23.3% experienced moderate effects, 3.6% experienced major effects, and 0.1% were associated with death³. This equates to over 60% of users experiencing noticeable adverse health effects. Prescription drug abuse is also associated with increased hospital visits and medical emergencies. The data also revealed that the intentional misuse of prescription drugs by adolescents resulted in thousands of hospitalizations. These users cause higher health care costs and use of resources compared to adolescents not abusing or misusing prescription drugs³.

The effects of prescription drug abuse are not limited to immediate health impacts. Misusing prescription drugs before the age of 16 can lead to a greater risk of later substance abuse. Adolescents are at a particularly sensitive neurodevelopmental stage, as their neuron pathways and brain cells are still maturing. Interference in this brain development early in life increases the likelihood of future addiction, potentially leading these adolescent users to a lifelong struggle with drugs². Adolescent users often develop acute tolerance to the effects of the medications; which plays a major role in dose escalation and resulting toxicity². When a person becomes addicted to a drug, his or her brain is changed. Normally, the brain releases dopamine in response to pleasurable experiences but through addiction this reaction becomes limited to only responding to increased levels of the drug. Disrupting this pathway early in development can result in permanent cognitive damage, the extent of which is largely unknown⁷. Often adolescents are not misusing just one medication. Prescription drug misuse can escalate frequently to multi-substance use¹. Prescription medication misuse may act as a gateway to further substance abuse, such as heroin or cocaine¹. Rice County has indicated a concern of increased use of heroin amongst its residents⁴. Therefore the potential for prescription drug abuse among adolescents has become an even greater concern for the county.

Nonmedical use of prescription medications is a concern beyond Rice County, extending to adolescents throughout the United States. This increased misuse is attributed to two components. First, numerous methods exist for adolescents to access prescription medications. These routes may include, but are not limited to, family members, home cabinets, friends, prescribing physicians, sellers, and the internet, thereby increasing their availability to adolescents. Second, many adolescents assume that prescription drugs are safer alternative than illegal street drugs, creating increased social acceptability and increased ease and willingness of youth to try and to share these medications⁵. This wide availability makes prescription medications more affordable to adolescents compared to illegal street drugs^{5,7}. Goldworthy (2009) reported that nearly 20% of the 600 surveyed adolescents admitted to misusing prescription drugs⁸. Prescription drug misuse is a real problem facing our nation's youth.

The purpose of this research study was to gain insight into how adolescents access prescription drugs for nonmedical use and where this supply originates. This information will be used to meet the needs of the Rice County Chemical Health Coalition. The most commonly identified access routes will guide prevention efforts, policy making, and intervention strategies regarding adolescent prescription drug abuse for health care providers, schools, community leaders, and law enforcement¹⁰. These policies will benefit current and future adolescents in Rice County.

3. Methodology

To determine or assess the common access routes utilized by Rice County adolescents, a survey was administered to a convenience sample of consenting students 18 years of age and older at a Midwestern high school. Subjects completed a short, anonymous paper survey with no identifying information provided. The survey was distributed to

all 18+ year old students at an area high school after obtaining consent from each student and verifying age using driver licenses. A researcher read the project information sheet and verbalized survey completion instructions to each student immediately prior to survey administration. Also, posters displayed around the school to advertise the study purpose to students. Each participant was given a cookie upon survey completion. Anonymity of individual participant's data was maintained by data aggregation prior to analysis and dissemination. The findings will be shared with the Rice County Chemical Health Coalition and school administration at the participating high school. The results were disseminated during a poster presentation at the National Conference of Undergraduate Research at Eastern Washington University in Cheney, Washington. Survey results were also shared with the Rice County Chemical Health Enforcement Team quarterly meeting. The enforcement team consisted of coalition members, law enforcement, and school officials among other community leaders.

4. Results

The target population at the surveyed high school was 245 students who were 18+ years old. Sixty students completed the survey. This equates to a 24.4% response rate. Of the participants, 36 identified as male (60%) and 24 as females (40%). While all students were 18 years old or above, only 5% (3) reported being 19 years old. The demographic profile of the student respondents are identified (Table 1) below.

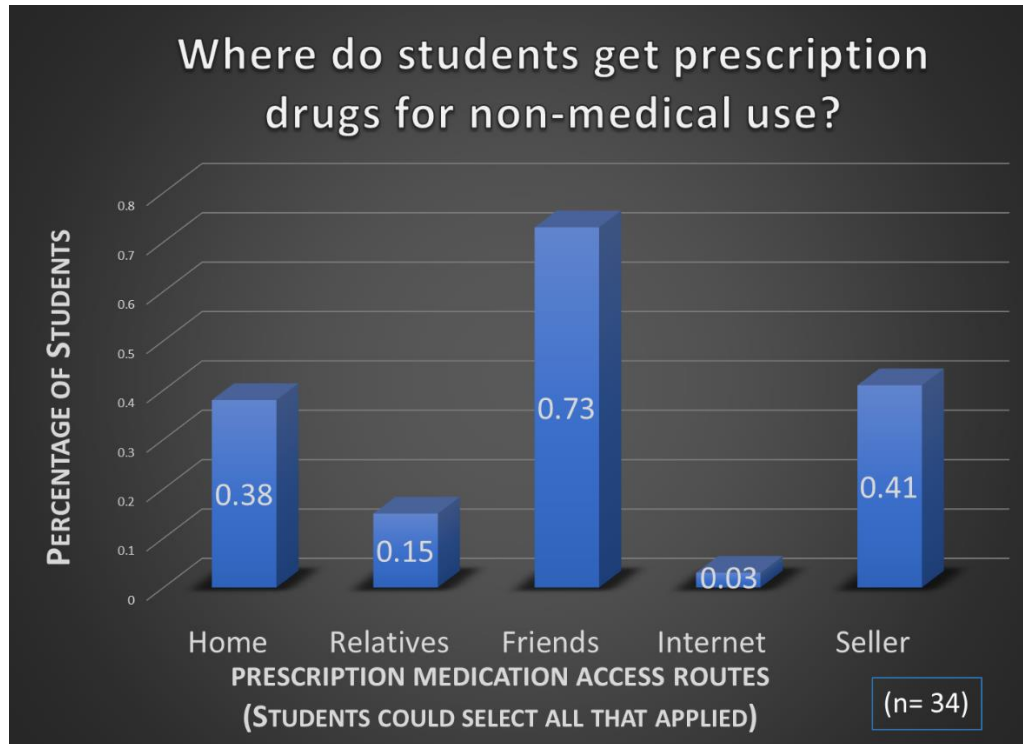
Table 1. demographic profile of surveyed students

<u>Ethnicity</u>	<u>Number of Students</u>	<u>Percentage of Responses</u>
White or Caucasian	34	56.6%
Hispanic or Latino	12	20%
Black or African American	12	20%
Asian or Pacific Islander	2	3.3%
Other	1	1.7%
White and Hispanic	1	1.7%

One student responded as both white and Hispanic, therefore a separate category was created in the results table to accommodate this student. Native American or American Indian was an ethnicity choice but no students indicated this choice

When respondents were asked if they were aware of prescription drug misuse by students in the school, 34 responded that they were indeed aware of such activity (57%) and 26 responded that they had no knowledge of prescription drug misuse (43%). While more than half of the participants indicated they knew of such misuse activity, only 5 out of the 60 students (8%) indicated that they themselves had misused prescription drugs. The students who responded positively to having knowledge of prescription drug use by peers or themselves (34) were then asked to indicate how these medications were accessed. Students could choose all answers that applied. These results are depicted (Graph 1) below.

Graph 1. identified access routes of prescription drugs by surveyed students



This bar graph depicts the responses from the 34 students who indicated they were aware of the misuse of prescription drugs at their school. Students could select more than one access route if it applied, therefore the total responses are more than 34 and the total percentage is above 100%.

The final question of the survey addressed whether or not students would be willing to share their prescription drugs with others if asked. The aggregated responses indicated that 8% of the students (5/60) would be willing to share, 23% (14) felt their actions would depend on the situation, and 69% (41) affirmed that they would not share their prescription medications with others. The survey questions are identified (Table 2) below.

Table 1. survey on prescription drug misuse administered to 18 year old students

Prescription Drug Use Survey
Spring 2015

Please do not include any identifying information - this survey is anonymous and your answers can't be traced by to you. This survey is completely voluntary and you may chose not to answer selected questions or discontinue the survey at any point. When you are finished, please turn in the survey and receive your cookie. If you have any concerns after taking the survey, research team members will be available to speak with you.

Please select the answer that matches your response. Please indicate your choice by circling the answer or answers you wish to choose.

1. What is your gender?
 - a. Male
 - b. Female
2. What is your age?
 - a. 18 years old
 - b. 19 years old
3. Please specify your ethnicity, select all that apply.
 - a. White
 - b. Hispanic or Latino
 - c. Black or African American
 - d. Native American or American Indian
 - e. Asian/Pacific Islander
 - f. Other
4. Are you aware of misuse of prescription drugs by students at your school? (Using medications that are not prescribed for you or using for purposes other than as prescribed)
 - a. Yes
 - b. No
5. Have you ever used prescription drugs that have not been prescribed for you?
 - a. Yes
 - b. No
6. If so, how do you or other students get them?
 - a. Home.
 - b. Relatives.
 - c. Friends.
 - d. Internet.
 - e. Seller.
7. If asked, would you share your prescription drugs with others?
 - a. Yes
 - b. No
 - c. Depends on the circumstances.

5. Discussion

Several inferences may be drawn from the results of this survey. There is widespread knowledge among the surveyed students that prescription drug misuse is occurring at their high school, as 57% identified this problem. This result echoes the concern voiced by the Rice County Chemical Health Coalition and Healthy People 2020. However, only 8% of the students responded to having personally misused prescription medications even though 57% know of its occurrence within the school. This gap may partially be due to students' fear of admitting personal usage due to conceived repercussions even with an anonymous survey. Students' awareness of NMUPD indicates that this issue is a significant problem within the school.

Of the 34 students responding positively to knowing about prescription drug misuse, the most common method to obtain the medications was from "Friends," at 73% (25/34). Therefore sharing or selling prescription medications between friends is the most utilized technique to obtain medications for non-medical use by adolescents in the high school. This may indicate an assumption by adolescents that prescription medications are less dangerous than illicit drugs as suggested in the literature^{2,7}. The second most common route was purchase from a "Seller" at 41% (14/34), and then "Home" access at 38% (13/34). The response rate for "Seller" was significantly higher than the researchers anticipated. In a survey completed by Bukstein, only 10% of the students reported purchasing prescription medications they abused². This result is significantly less than 41% of students in Rice County who identified a seller as the access point. This is disturbing as it may indicate a system of drug selling within the school district or the surrounding community. The higher response rate to "Home" was anticipated as research has shown that a poorly monitored medicine cabinet is often an easy site of access to prescription medications for adolescents. Many families are unsure how to dispose of unused prescription drugs in their home, leaving these medications in easy to access locations². Few respondents indicated that "Relatives" or the "Internet" were common access routes utilized by students.

Approximately a quarter of the total participants (23%) indicated that they would share their prescription drugs with others depending on the circumstances and another 8% replied that they would share with others. It is alarming indicates that adolescents are comfortable misusing prescription medications. This attitude and the willingness of these adolescents to participate in the spread of prescription medication misuse may lead to the continued and growing problem within Rice County and the school district.

5.1 limitations

While the findings of this study are significant, there were limitations. Generalizability of the survey results were limited due to using only 18+ year old students. Originally the researchers surveyed 9th and 11th grade students but due to the institutional IRB requiring active parental consent with minimal response rate of 3% (n=600), the researchers opted to use 18+ year olds able to consent which limited the sample size. This convenience sample may not represent the student body with a response rate of only 25% (60/245). Also, students needed to have a valid photo ID with their birth date to take the survey which may have further limited our sample size to only students with a driver's license. In order to maintain full anonymity of the participants, the access route to prescription medications question was limited to only suggest routes, students could not write-in or choose a route not provided. Therefore, additional access routes may have been omitted due to the limited choices. As previously mentioned, there was a significant difference between the number of students indicating knowledge of prescription drug abuse and those that were actually participating in such activities. This inequality may be due to the survey not reaching the students engaging in this activity, students' fear that their responses might be traced back to them or that only a small percentage of students are misusing prescription medications but that their activity is well known among the rest of the student body.

5.2 implications

The study will be directly applicable to many agencies and interest groups within Rice County, as well as meeting the needs of the Rice County Chemical Health Coalition. The common access routes to prescription medications as identified by the surveyed student population will be used to guide prevention efforts, policy making, and intervention strategies regarding prescription drug access, storage, use and abuse for community health care providers, local school districts, community leaders, and law enforcement⁴. These policies will be utilized to educate, maintain safety, and benefit all current and future adolescents in Rice County. This information will also contribute to the growing

knowledge base of NMPDU among adolescents within the US. Adding evidence about NMPDU access may help increase awareness of this problem.

5.3 suggestions for further research

While this survey provided valuable insight about common access routes adolescents use to obtain prescription, more research needs to be completed on prescription medication misuse. Prescription drug misuse is an issue among adolescents in Rice County therefore, it may be beneficial to obtain further information as to which class or type of prescription medications are most commonly misused. This information may inform prescribing physicians to help create a stricter system for prescription attainment and follow up by the local health care system. The motivation for the misuse may also offer valuable insight into how to prevent such activities from occurring by offering more education and resources to those who need it.

6. Conclusion

Adolescent abuse of prescription medications is a growing concern throughout the U.S. Rice County is not immune to this issue and has identified such activity as a potentially significant problem within its communities. This survey aimed to contribute to the knowledge of non-medical prescription medication use among adolescents in Rice County. Sixty students completed an anonymous survey regarding prescription drug misuse. Results of this study indicated that while only a small percentage of the surveyed students had misused prescription medications themselves, 65% of the student population was aware of prescription drug misuse among their peers in the school. Several access routes were identified, “friends” was the most commonly indicated, followed by obtainment through a “seller” and the “home.” Unfortunately the generalizability of the results were hampered by the necessity of using only 18+ year old students with a valid photo ID containing birth date information, which created a convenience sample. Even so, the adolescents’ awareness of NMPDU and the identified common access routes should be used to guide prevention efforts, policy making, and intervention strategies regarding prescription drug abuse for health care providers, schools, community leaders, and law enforcement. These policies will serve to benefit all current and future adolescents in Rice County.

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