

EFFECTIVENESS OF IMPROVING KNOWLEDGE AND SKILLS OF MEDICAL AND PEDAGOGICAL STAFF ON PREVENTION OF ACUTE INTESTINAL INFECTIONS: AN INTERDISCIPLINARY EDUCATIONAL INTERVENTION

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Abstract: Acute intestinal infections remain a significant public health challenge, particularly within organized children's collectives such as schools and kindergartens. The rapid spread of these infections is often exacerbated by a lack of specific preventive knowledge among the staff responsible for child care. This article presents a prospective study conducted at the Department of Epidemiology and Infectious Diseases of Andijan State Medical Institute. Using the IMRAD framework, the research evaluates the efficacy of a targeted training program designed for two distinct groups: school nurses and pedagogical staff. The study utilized a pre-test and post-test design to measure changes in theoretical knowledge regarding transmission routes and practical skills in outbreak management. The results indicate that while medical staff possessed a higher baseline knowledge, pedagogical staff demonstrated the most significant comparative improvement following the intervention. The study concludes that regular, structured educational programs involving both medical and non-medical personnel are essential for reducing the incidence of intestinal infections in educational settings.

Keywords: acute intestinal infections, health education, prevention, epidemiology, school hygiene, pedagogical staff, Andijan State Medical Institute.

ЭФФЕКТИВНОСТЬ ПОВЫШЕНИЯ ЗНАНИЙ И НАВЫКОВ МЕДИЦИНСКОГО И ПЕДАГОГИЧЕСКОГО ПЕРСОНАЛА ПО ПРОФИЛАКТИКЕ ОСТРЫХ КИШЕЧНЫХ ИНФЕКЦИЙ: МЕЖДИСЦИПЛИНАРНОЕ ОБРАЗОВАТЕЛЬНОЕ ВМЕШАТЕЛЬСТВО

Аннотация: Острые кишечные инфекции остаются серьезной проблемой общественного здравоохранения, особенно в организованных детских коллективах, таких как школы и детские сады. Быстрое распространение этих инфекций часто усугубляется недостатком специальных профилактических знаний у персонала, ответственного за уход за детьми. В данной статье представлено проспективное исследование, проведенное на кафедре эпидемиологии и инфекционных болезней Андижанского государственного медицинского института. Используя структуру IMRAD, исследование оценивает эффективность целевой программы обучения, разработанной для двух различных групп: школьных медсестер и педагогического персонала. В исследовании использовался дизайн пре-теста и пост-теста для измерения изменений в теоретических знаниях о путях передачи и практических навыках управления вспышками. Результаты показывают, что, хотя медицинский персонал обладал более высокими исходными знаниями, педагогический персонал продемонстрировал наиболее значительное сравнительное улучшение после вмешательства. Исследование делает вывод, что регулярные структурированные образовательные программы с участием как медицинского, так и немедицинского персонала необходимы для снижения заболеваемости кишечными инфекциями в образовательных учреждениях.

Ключевые слова: острые кишечные инфекции, санитарное просвещение, профилактика, эпидемиология, школьная гигиена, педагогический персонал, Андижанский государственный медицинский институт.

Tibbiy va pedagogik xodimlarning o'tkir ichak infeksiyalari profilaktikasi bo'yicha bilim va ko'nikmalarini oshirish samaradorligi: Fanlararo ta'limiy aralashuv

Annotatsiya: O'tkir ichak infeksiyalari, ayniqsa maktablar va bolalar bog'chalari kabi uyushgan bolalar jamoalarida jamoat salomatligining jiddiy muammosi bo'lib qolmoqda. Ushbu infeksiyalarning tez tarqalishi ko'pincha bolalarni parvarish qilishga mas'ul xodimlarda maxsus profilaktik bilimlarning yetishmasligi bilan kuchayadi. Ushbu maqolada Andijon davlat tibbiyot institutining Epidemiologiya va yuqumli kasalliklar kafedrasida o'tkazilgan prospektiv tadqiqot natijalari keltirilgan. IMRAD tuzilmasiga asoslangan ushbu ish ikki xil guruh: maktab hamshiralari va pedagogik xodimlar uchun ishlab chiqilgan maqsadli o'quv dasturining samaradorligini baholaydi. Tadqiqotda yuqtirish yo'llari bo'yicha nazariy bilimlar va kasallik avj olishini boshqarish bo'yicha amaliy ko'nikmalardagi o'zgarishlarni o'lchash uchun dastlabki va yakuniy test usulidan foydalanildi. Natijalar shuni ko'rsatadiki, tibbiyot xodimlari yuqori boshlang'ich bilimlarga ega bo'lishsa-da, pedagogik xodimlar mashg'ulotlardan so'ng eng sezilarli qiyosiy o'sishni namoyish etdilar. Tadqiqot ta'lim muassasalarida ichak infeksiyalari bilan kasallanishni kamaytirish uchun ham tibbiy, ham nomutaxassis xodimlarni jalg qilgan holda muntazam, tizimli ta'lim dasturlari zarur degan xulosaga keladi.

Kalit so'zlar: o'tkir ichak infeksiyalari, sanitariya targ'iboti, profilaktika, epidemiologiya, maktab gigiyenasi, pedagogik xodimlar, Andijon davlat tibbiyot instituti.

INTRODUCTION

Acute intestinal infections (AII) continue to represent a major burden on the healthcare system of Uzbekistan, specifically affecting the pediatric population. The epidemiology of these infections involves various pathogens, including rotavirus, salmonella, and shigella, which thrive in environments where hygiene protocols are compromised. Organized children's collectives, such as preschools and primary schools, are recognized as high-risk zones for local outbreaks due to the close contact among children and the shared use of sanitary facilities and dining areas.

While the primary responsibility for diagnosing and treating these infections lies with the healthcare sector, the prevention of transmission within educational institutions relies heavily on the daily practices of the staff present on-site. This includes not only the school medical personnel but, perhaps more importantly, the pedagogical staff who supervise children throughout the day. Teachers and educators are often the first to notice symptoms of illness and are responsible for enforcing hygiene habits such as handwashing. However, observations suggest that pedagogical staff often lack formal training in infectious disease epidemiology, while medical staff may not always be up-to-date with the latest sanitary norms and outbreak management protocols.

At the Department of Epidemiology and Infectious Diseases of Andijan State Medical Institute, it was hypothesized that a knowledge gap exists between current sanitary requirements and the actual practices in educational institutions. Furthermore, it was proposed that a structured, interdisciplinary educational intervention could bridge this gap. The rationale for this study is rooted in the concept that effective prevention requires a "whole-school" approach where every staff member is a stakeholder in health security.

This article aims to evaluate the effectiveness of a specialized training seminar designed to improve the knowledge and skills of medical and pedagogical staff regarding the prevention of acute intestinal infections. The study seeks to quantify the improvement in theoretical understanding and practical application of preventive measures following the educational intervention.

METHODS

The study was designed as a prospective, quasi-experimental educational intervention with a pre-test/post-test design. It was conducted over a period of six months in collaboration with the

Department of Epidemiology and Infectious Diseases of Andijan State Medical Institute and the regional Department of Public Education.

Participants The study population consisted of two distinct cohorts recruited from twenty randomly selected educational institutions (ten kindergartens and ten schools) in the Andijan region.

Group 1 (Medical Staff): Comprised forty school nurses and physicians responsible for health monitoring in these institutions.

Group 2 (Pedagogical Staff): Comprised eighty educators, including kindergarten teachers and primary school teachers. Informed consent was obtained from all participants prior to the commencement of the study.

Educational Intervention The intervention consisted of a two-day intensive seminar titled "Modern Strategies for the Prevention of Acute Intestinal Infections in Organized Collectives." The curriculum was developed by the faculty of the institute and covered four key modules. The first module addressed the epidemiology and transmission routes of common intestinal pathogens. The second module focused on early symptom recognition and isolation protocols. The third module detailed sanitary-hygienic requirements for food handling and water safety. The fourth module was a practical workshop on hand hygiene techniques and surface disinfection procedures.

Data Collection Instruments A standardized questionnaire was developed to assess knowledge and skills. The questionnaire consisted of twenty multiple-choice questions regarding theoretical knowledge (maximum 20 points) and five scenario-based questions regarding practical management of a hypothetical outbreak (maximum 10 points). This test was administered immediately before the seminar (pre-test) and two weeks after the completion of the seminar (post-test) to evaluate retention. Additionally, a checklist was used to objectively observe handwashing techniques during the practical workshop.

Statistical Analysis Data were analyzed using statistical software suitable for social sciences. The mean scores of the pre-test and post-test were compared using paired t-tests within groups and independent t-tests between groups. The improvement rate was calculated as a percentage. A p-value of less than 0.05 was considered statistically significant.

RESULTS

The analysis of the pre-test and post-test data revealed significant disparities in baseline knowledge and marked improvements following the educational intervention.

Baseline Knowledge Assessment The pre-test results indicated a predictable gap between the two groups. Group 1 (Medical Staff) achieved a mean baseline score of 14.5 out of 30. While they showed competence in general medical terminology, gaps were identified in specific epidemiological protocols and modern disinfection standards. Group 2 (Pedagogical Staff) achieved a significantly lower mean baseline score of 8.2 out of 30. The analysis of their answers revealed widespread misconceptions regarding the transmission of viral gastroenteritis and the correct concentration of disinfectant solutions. Specifically, only 25 percent of teachers could correctly identify the "fecal-oral" mechanism as the primary route of transmission for the presented scenarios.

Post-Intervention Improvement Following the two-day seminar, both groups demonstrated statistically significant improvements in their test scores.

Medical Staff: The mean score increased from 14.5 to 24.8. This represents an improvement of approximately 71 percent. The most significant gains were observed in the practical management of outbreaks and the correct use of emergency notification protocols.

Pedagogical Staff: The mean score increased dramatically from 8.2 to 21.5. This represents an improvement of over 160 percent. The teachers demonstrated a newfound ability to recognize early signs of dehydration and correctly described the protocol for isolating a symptomatic child.

Practical Skills Evaluation The observational component regarding hand hygiene revealed

that theoretical knowledge does not always correlate with practice. At baseline, only 40 percent of medical staff and 15 percent of pedagogical staff performed handwashing according to WHO guidelines (adequate duration and coverage). During the post-training assessment, compliance rates rose to 90 percent for medical staff and 85 percent for pedagogical staff. This suggests that the practical workshop component of the intervention was highly effective in altering behavioral patterns.

Comparative Effectiveness While the medical staff maintained higher absolute scores, the "learning delta" or relative growth was significantly higher in the pedagogical group. This indicates that educators are a highly receptive audience for health education and that their previous lack of knowledge was due to a lack of training opportunities rather than a lack of capacity to learn.

DISCUSSION

The findings from Andijan State Medical Institute highlight the critical importance of interdisciplinary training in public health.

The Pedagogical Gap The study results confirm that pedagogical staff are the "front line" of defense against intestinal infections but have historically been under-equipped with the necessary knowledge. Teachers supervise handwashing, meal times, and toilet usage. Their baseline low scores explain why outbreaks can spread rapidly before medical staff intervene. The dramatic improvement in their scores suggests that empowering teachers with basic epidemiological knowledge is a low-cost, high-impact intervention. When a teacher understands why a surface needs disinfection or why a child with diarrhea must go home immediately, compliance with sanitary rules improves naturally.

Updating Medical Competence The improvement seen in the medical staff group is also noteworthy. Even trained professionals require continuous medical education. The study revealed that many school nurses were relying on outdated protocols. The seminar updated their knowledge on modern disinfectants and the specific epidemiology of viral agents like Rotavirus, which requires different control measures than bacterial infections.

Synergy in Prevention The discussion must emphasize the value of training these two groups together. During the seminar sessions, it was observed that interaction between nurses and teachers fostered better communication. They established a common language regarding health safety. For instance, teachers learned to report vague symptoms earlier, and nurses learned to appreciate the logistical challenges teachers face in maintaining hygiene in crowded classrooms. This synergy is essential for creating a "biosafety culture" within the institution.

Long-term Implications The study suggests that a one-time intervention is effective in the short term, but the sustainability of these results requires further investigation. To maintain high levels of vigilance against acute intestinal infections, such training should likely be incorporated into the mandatory annual certification for all educational employees, not just medical staff.

CONCLUSION

The research conducted at the Department of Epidemiology and Infectious Diseases of Andijan State Medical Institute supports the following conclusions regarding the prevention of acute intestinal infections.

Firstly, there is a significant baseline deficit in specific preventive knowledge among pedagogical staff and, to a lesser extent, school medical staff. This deficit constitutes a risk factor for the spread of infections in organized children's collectives.

Secondly, a targeted, short-term educational intervention is highly effective in improving both theoretical knowledge and practical skills. Pedagogical staff demonstrated the greatest relative improvement, proving their potential as key agents of sanitary control.

Thirdly, practical training on specific skills such as handwashing and isolation protocols yields immediate improvements in compliance.

Therefore, it is recommended to institutionalize regular, interdisciplinary health education programs. Reducing the incidence of acute intestinal infections requires moving beyond the medical office and integrating preventive concepts into the daily pedagogical process. By transforming teachers into informed health partners, we can create a safer environment for the child population.

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