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ASSESSMENT OF PUBLIC AWARENESS OF RISK FACTORS FOR THE DEVELOPMENT OF CHRONIC RENAL FAILURE

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Resume

Background. Chronic renal disease is a significant problem for the healthcare systems of many countries, as its treatment requires significant economic costs. This problem is especially relevant since chronic renal failure is often diagnosed at late stages, when kidney dysfunction is already irreversible. One of the key measures to prevent chronic renal disease is raising public awareness of early symptoms and risk factors, which contributes to timely seeking of medical care. However, studies show that most people are insufficiently aware of risk factors such as smoking, poor diet, lack of physical activity, diabetes, gender, high blood pressure, cardiovascular diseases (including heart failure and previous heart attack), as well as increased stress levels and obesity. Increasing public awareness of these risks can be an important step in the prevention and early diagnosis of chronic renal disease.

Purpose of the study. To determine the level of respondents' awareness regarding the risk factors contributing to the development of chronic kidney failure.

Materials and methods. The study was a cross-sectional (one-time) survey conducted in a healthcare facility. Patients participated in the survey while seeking medical care. The survey was conducted anonymously. A total of 79 respondents participated, of whom 43.0% were male (34) and 57.0% were female (45).

Results. The survey results revealed that most respondents were insufficiently informed about the risk factors associated with renal diseases. According to the study participants, the most common risk factors leading to the development of chronic kidney failure are excessive stress, obesity, and high blood pressure.

Conclusions. Patients who are aware of potential risks can adopt lifestyle changes, including improving their diet, quitting harmful habits, and engaging in regular physical activity, which positively impacts kidney health. Early diagnosis and management of risk factors help slow the progression of chronic kidney failure, reducing the need for costly treatments in the later stages.

Keywords: Chronic Renal Failure, Risk Factors, Renal diseases, Awareness

СОЗЫЛМАЛЫ БҮЙРЕК ЖЕТКІЛІКСІЗДІГІ ДАМУ ҚАУІПІ ФАКТОРЛАРЫ ТУРАЛЫ НАУҚАСТАРДЫҢ ХАБАРДАР БОЛУЫН БАҒАЛАУ

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Түйін

Кіріспе. Созылмалы бүйрек ауруы көптеген елдердің денсаулық сақтау жүйелері үшін маңызды мәселе болып табылады, себебі оның емі елеулі экономикалық шығындарды талап етеді. Бұл мәселе әсіресе өзекті, өйткені созылмалы бүйрек жеткіліксіздігі көбінесе бүйрек функциясы қайтымсыз бұзылған кеш сатыларда анықталады.

Созылмалы бүйрек ауруымен күрестегі негізгі шаралардың бірі – халықты ерте белгілер мен қауіп факторлары туралы хабардар ету болып табылады, бұл медициналық көмекке уақтылы жүгінуге ықпал етеді. Алайда, зерттеулер көрсеткендей, адамдардың көпшілігі темекі шегу, дұрыс тамақтанбау, физикалық белсенділіктің жетіспеушілігі, қант диабеті, жыныс, жоғары қан қысымы, жүрек-қан тамырлары аурулары (жүрек жеткіліксіздігі мен инфарктті қоса алғанда), сондай-ақ стресстің жоғары деңгейі мен семіздік сияқты қауіп факторлары туралы жеткілікті білмейді. Халықтың бұл қауіптер туралы білім деңгейін арттыру созылмалы бүйрек ауруының алдын алу мен ерте диагностикасындағы маңызды қадам бола алады.

Зерттеу мақсаты. Созылмалы бүйрек жеткіліксіздігі ауруларының дамуына ықпал ететін қауіп факторлары туралы респонденттердің хабардар болу деңгейін анықтау.

Материалдар мен әдістер. Зерттеу көлденең (бірмезеттік). Сауалнама Алматы қаласының № 5 қалалық емханасында жүргізілді. Науқастар медициналық көмекке жүгінуге кезінде сауалнамаға қатысты. Сауалнама жасырын түрде жүргізілді. Сауалнамаға 79 респондент қатысты, олардың 43,0% ер (34) және 57,0% әйел (45).

Зерттеу нәтижелері. Сауалнама нәтижелері көрсеткендей, респонденттердің көпшілігі бүйрек ауруларымен байланысты қауіп факторлары туралы жеткілікті білмейді. Зерттеуге қатысушылардың пікірінше, созылмалы бүйрек жеткіліксіздігінің дамуына көбінесе артық стресс, семіздік және жоғары қан қысымы сияқты қауіп факторлары әкеледі.

Қорытынды. Ықтимал қауіптерді білетін пациенттер өмір салтын өзгерте алады, соның ішінде диетаны жақсарту, жаман әдеттерден бас тарту және бүйрек денсаулығына оң әсер ететін тұрақты физикалық белсенділік. Тәуекел факторларын ерте диагностикалау және түзету созылмалы бүйрек жеткіліксіздігі прогрессиясының баяулауына ықпал етеді, бұл кейінгі кезеңдерде қымбат емдеу қажеттілігін азайтады.

Түйінді сөздер. Созылмалы бүйрек жеткіліксіздігі, қауіп факторлары, бүйрек аурулары, хабардарлық.

ОЦЕНКА ИНФОРМИРОВАННОСТИ НАСЕЛЕНИЯ О ФАКТОРАХ РИСКА РАЗВИТИЯ ХРОНИЧЕСКОЙ ПОЧЕЧНОЙ НЕДОСТАТОЧНОСТИ

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Резюме

Введение. Хроническая болезнь почек представляет значительную проблему для систем здравоохранения многих стран, поскольку её лечение требует значительных экономических затрат. Особенно актуальной эта проблема становится из-за того, что хроническая почечная недостаточность часто диагностируется на поздних стадиях, когда нарушения функции почек уже необратимы.

Одной из ключевых мер в борьбе с хронической болезнью почек является повышение информированности населения о ранних симптомах и факторах риска, что способствует своевременному обращению за медицинской помощью. Однако исследования показывают, что большинство людей недостаточно осведомлены о таких факторах риска, как курение, неправильное питание, недостаток физической активности, сахарный диабет, пол, высокое артериальное давление, сердечно-сосудистые заболевания (включая сердечную недостаточность и перенесённый инфаркт), а также повышенный уровень стресса и ожирение. Повышение уровня знаний населения о данных рисках может стать важным шагом в профилактике и ранней диагностике хронической болезни почек.

Цель исследования. Определить уровень информированности респондентов о факторах риска, способствующих развитию заболевания хронической почечной недостаточности.

Материалы и методы. Исследование поперечное (одномоментное). Опрос проводился в городской поликлинике № 5 г. Алматы. Пациенты участвовали в анкетировании во время обращения за медицинской помощью. Опрос проводился анонимно. В опросе приняли участие 79 респондентов, из них 43,0% мужского пола (34) и 57,0% женского пола (45).

Результаты исследования. Результаты опроса показали, что большинство респондентов недостаточно осведомлены о факторах риска, связанных с заболеваниями почек. По мнению участников исследования, наиболее часто к развитию хронической почечной недостаточности приводят такие факторы риска, как избыточный стресс, ожирение и высокое артериальное давление.

Выводы. Пациенты, знающие о возможных рисках, могут менять образ жизни, включая улучшение диеты, отказ от вредных привычек и регулярную физическую активность, что положительно влияет на здоровье почек. Ранняя диагностика и коррекция факторов риска способствуют замедлению прогрессирования хронической почечной недостаточности, что снижает потребность в дорогостоящем лечении на поздних стадиях.

Ключевые слова: Хроническая почечная недостаточность, факторы риска, заболевания почек, осведомленность.

Background. Renal disorders are a global public health problem, affecting more than 800 million people worldwide. According to the latest version of the UN and WHO Declaration, the high prevalence of chronic renal disorder (13.4% of the adult population) requires special attention and priority consideration [1,2]. At the same time, the level of prevalence, diagnosis and treatment of such diseases varies significantly depending on the country. In developed countries, renal disorders have been studied most thoroughly, but more and more studies confirm that in developing countries their prevalence can be comparable or even higher than in developed countries [3].

According to the World Health Organization (WHO), renal disorders were among the top ten leading causes of death in the world in 2019. Over the past five years, they have risen from thirteenth to tenth place in the overall ranking of causes of death. Mortality from these diseases has increased significantly: from 813 thousand cases in 2000 to 1.3 million in 2019 [4].

The main factors leading to the development of chronic renal disorder (CRD) and end-stage renal failure are diabetes and hypertension. Estimated glomerular filtration rate is used to classify CRD (stages 0-5). The term "chronic renal failure" is most often applied to stages 3-5 of CRD.

Cardiovascular diseases are the leading cause of morbidity and mortality among patients with chronic renal failure, including those at end-stage renal failure [5].

According to Sharma M. et al. (2018), chronic renal disorder is one of the leading causes of chronic disease worldwide, with increasing incidence and prevalence. It is a major risk factor for cerebrovascular disease and coronary heart disease, which are the leading causes of death in this population. According to the authors, the etiology of CRD is diverse. With the objective of identifying the most common causes of CRD, a study was conducted by the authors to evaluate the different etiologies of CRD among patients presenting to the Department of Nephrology, Guwahati Medical College. A total of 5718 patients with CRD were screened to identify the cause of CRD. The most common cause was diabetes mellitus in 42.2% followed by chronic glomerulonephritis in 21.4%, hypertension in 19.5%, obstructive uropathy in 6.9%, chronic interstitial nephritis in 3.6% and autosomal dominant polycystic kidney disease in 1.5% of patients. Almost 2.7% of patients had CRD of unknown etiology [6]. General risk factors for the development and progression of chronic renal disorder include non-modifiable and potentially modifiable risk factors. Non-modifiable risk factors include:

1. Age
2. Gender
3. Race and ethnicity
4. Congenital malformations and decreased number of renal nephrons

- 5. Genetic factors
- 6. Blood type

Potentially modifiable risk factors include:

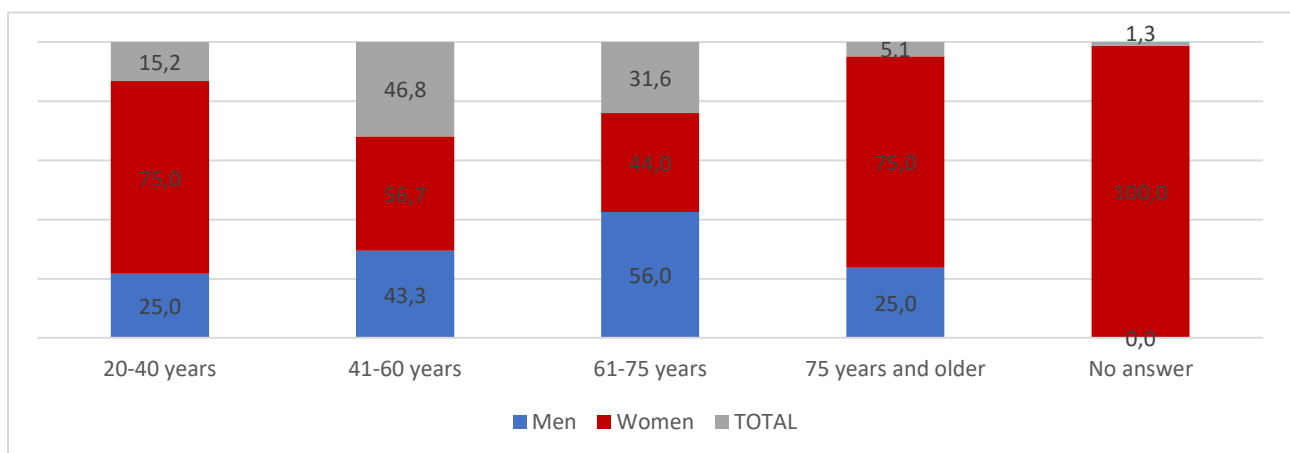
1. Acute urogenital infection.
2. Dyslipoproteinemia.
3. Arterial hypertension.
4. Smoking, alcoholism, drug addiction, substance abuse.
5. Associated diseases (factors): staphylococcal infections (tonsillitis, pharyngitis), heart failure, obesity, anemia, diabetes mellitus, diffuse connective tissue diseases, obstructed urine outflow, vesicoureteral reflux, helminthic invasion.
6. Frequent change of sexual partners.
7. Dietary habits, dehydration, high-protein diet.
8. Tendency to stone formation.
9. Iatrogenic factors (analgesics, NSAIDs, radiocontrast agents, nephrotoxic antibiotics, etc.).
10. Complicated pregnancy and childbirth.
11. Increased activity of the sympathetic nervous system.
12. Contact with hemolytic poisons, hydrocarbons, solvents, benzene compounds and heavy metals during professional activity significantly increases the risk of renal disorder in the future [7].

Diabetic renal disorder (diabetic nephropathy) is the leading cause of chronic renal disorder and end-stage renal failure. The development of this disease is due to a complex and diverse pathogenesis, including glomerular hypertrophy, tubulointerstitial inflammation and renal tissue fibrosis. Patients with diabetic nephropathy are at high cardiovascular risk, comparable to the risk in patients with coronary heart disease [8]. In this regard, timely detection and control of risk factors for diabetic nephropathy are of key importance. This allows for prompt diagnosis and treatment aimed at slowing the progression of the disease. The main risk factors include elevated glucose levels, long-term diabetes mellitus, high blood pressure, obesity and dyslipidemia. Many of these factors can be corrected with antidiabetic, antihypertensive and lipid-lowering therapy, as well as through changes in the patient's lifestyle [9]. Of particular importance is the in-depth study of sex and gender differences in the etiology, mechanisms, and epidemiology of chronic renal disorder (CRD). This will allow nephrologists to better tailor approaches to treatment and prevention, more fully meeting the needs of patients. The results of population studies indicate gender differences in the epidemiology of chronic renal disorder. The disease is more often diagnosed in women, especially at stage G3. This may be due to the longer life expectancy of women, which naturally leads to a decrease in the glomerular filtration rate (GFR) with age. In addition, incorrect use of formulas for calculating GFR contributes to overdiagnosis of CRD, which partly explains the higher prevalence of the disease among women.

However, despite the above-mentioned features, men predominate among patients starting renal replacement therapy (RRT). Possible explanations for this may include the protective effect of estrogens in women, the negative effect of testosterone in men, and unhealthy lifestyle factors that accelerate the decline of kidney function in men. At the same time, older women more often choose conservative treatment methods, avoiding RRT. Gender differences are also evident in disease outcomes. For example, despite equal access of men and women to kidneys from living donors, women are less likely to receive transplants from deceased donors. Health-related quality of life in women on renal replacement therapy (RRT) is lower than in men. At the same time, women more often report a higher level of symptom burden. These data provide an opportunity to better understand the differences in the pathophysiology of the disease, as well as to identify social factors that, if addressed, can help reduce inequalities in access to health care and improve treatment outcomes for patients with chronic kidney disease [10-16].

Thus, it can be noted that the development of renal disorder and chronic renal failure is influenced by many risk factors. Increasing public awareness of such factors can help prevent renal disorder and reduce the risk of complications.

The purpose of this study was to assess the level of public awareness of risk factors contributing to the development of chronic renal failure.



Materials and methods. The study is cross-sectional (one-time). The survey was conducted in City Polyclinic No. 5 of Almaty (January-March 2023). Patients participated in the survey when seeking medical care at the clinic. The survey was conducted anonymously. The survey involved 79 respondents, of whom 43.0% were male (34) and 57.0% were female (45). The largest number of participants in both groups was people in the 41-60 age range, of which 43.3% were male and 56.7% were female.

Among the males, 56.0% took part in the survey aged 61-75, almost twice as many as among the females, where the figure was 44.0%. Thus, the largest number of respondents took part in the 41-60 age range 46.8% and 61-75 age range 31.6%, the smallest number were over 75 years old 5.1% (Figure 1).

Figure 1 – Distribution of respondents by age

The survey examined respondents' opinions on the influence of various risk factors on the development of chronic renal failure. These factors included diabetes, gender, high blood pressure, cardiovascular diseases (heart failure or previous heart attack), as well as increased stress levels and obesity.

Results. Diabetes was indicated as a risk factor by 34.18% of respondents, of which 40.0% were women and 26.4% were men. Incorrect answers were given by 26.58% of participants, and 36.71% of respondents did not know the answer to this question, of which 44.12% were men and 31.11% were women. The question was skipped by 2.53% (2) of respondents.

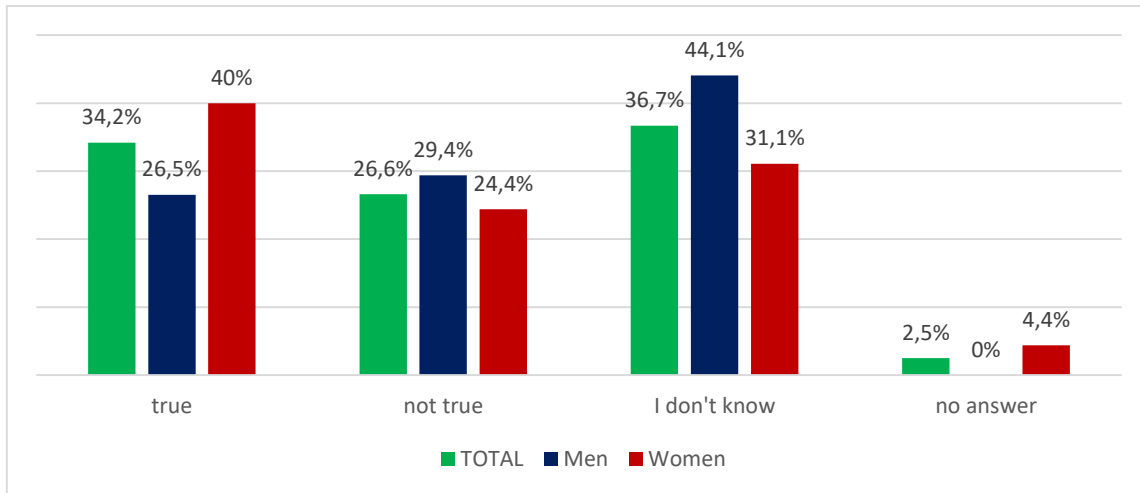


Figure 2 – Respondents' awareness of the diabetes' impact as a risk factor on renal health

When studying the risk factor for renal disorder by gender, it was found that 32.9% of respondents were aware of this risk factor. Among them, the proportion of women was 46.6%, which is 31.9% higher than among men (14.7%). At the same time, 51.9% of respondents did not know about this risk factor, and 12.6% gave incorrect answers. The level of ignorance was higher among men (70.5%) compared to women (37.7%) (Figure 3).

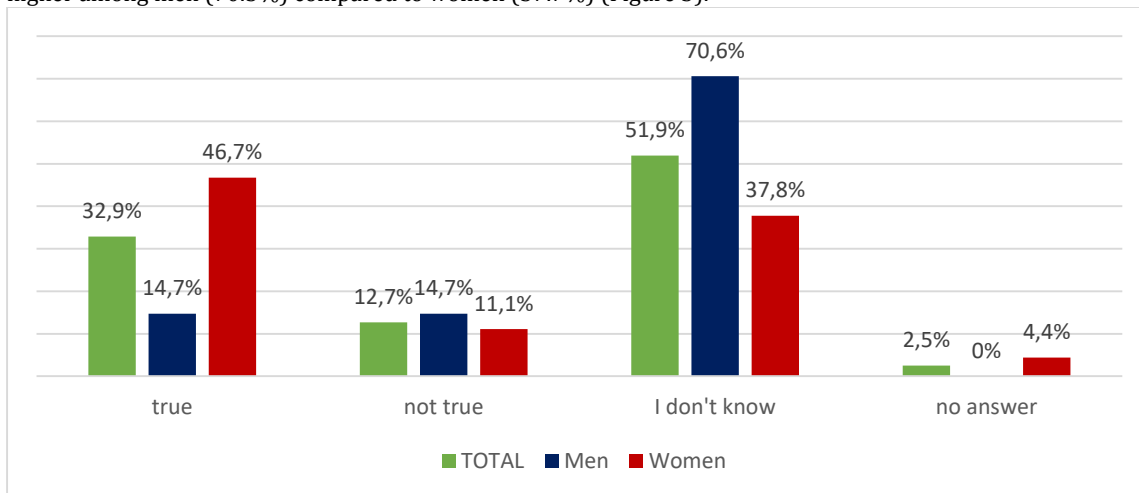


Figure 3 – Respondents' awareness of the influence of female gender as a risk factor for renal health

High blood pressure was reported as a risk factor for renal disorder by 44.3% of respondents, of whom 41.1% were men and 46.6% were women. 17.7% of respondents gave an incorrect answer to this question. However, more than a third of respondents (35.4%) do not know whether high blood pressure is a risk factor for renal disorder, with the level of ignorance being higher among men (44.1%) than women (28.8%) (Figure 4).

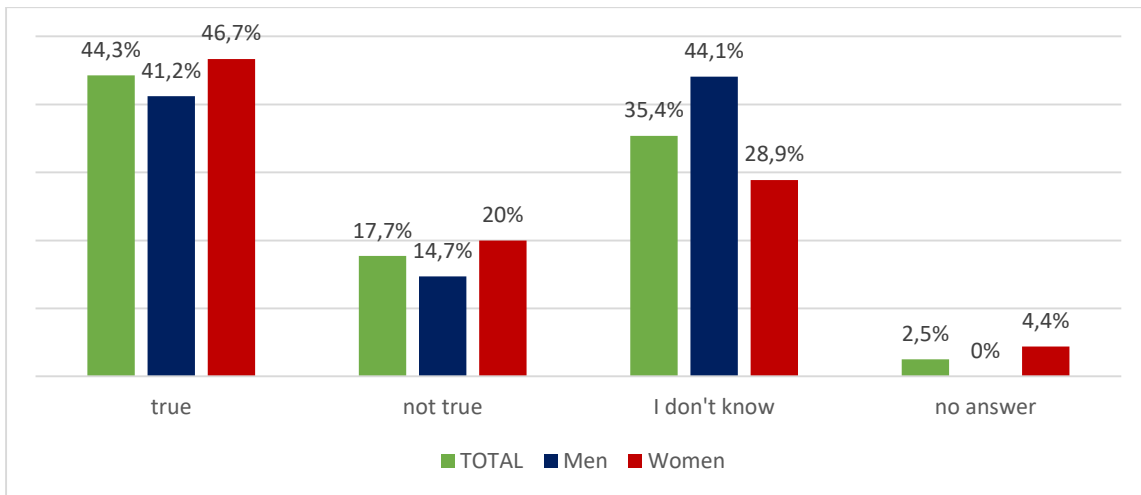


Figure 4 – Respondents’ awareness of the high blood pressure impact as a risk factor on renal health

Heart problems, such as heart failure or heart attack, can also be a risk factor for kidneys, according to 29.1% of respondents. More than a third of respondents (39.2%) hold the opposite opinion. Ignorance on this issue was noted by respondents of both sexes equally - 26.47% each (Figure 5).

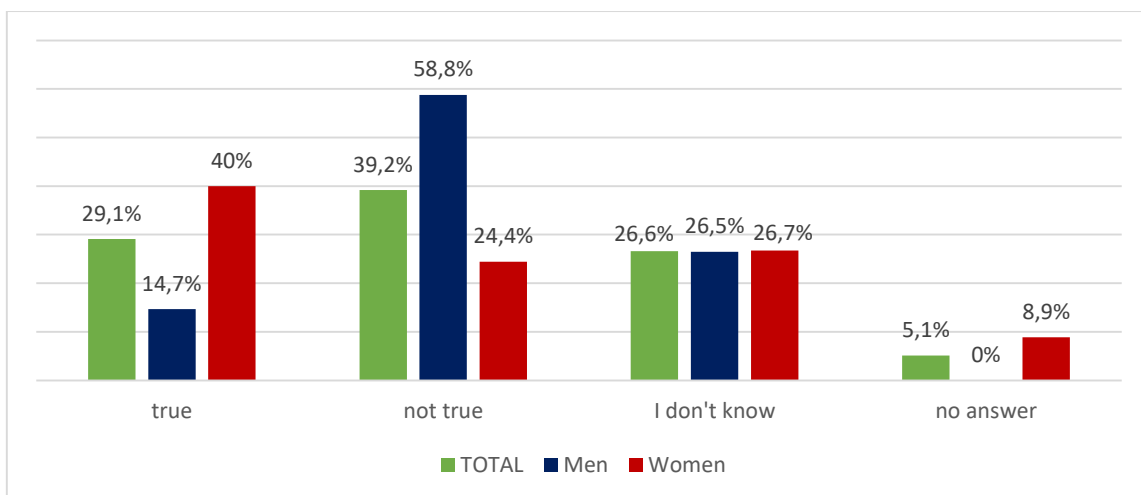


Figure 5 – Respondents’ awareness of the impact of risk factors such as heart problems, including heart failure or heart attack, on the development of renal disorder

69.6% of respondents agreed that excessive stress can cause renal disorder, with 70.6% of them being men and 68.6% being women. A third of respondents indicated that they did not know whether excessive stress could influence the occurrence of renal disorder (29.4% of men and 31.1% of women) (Figure 6).

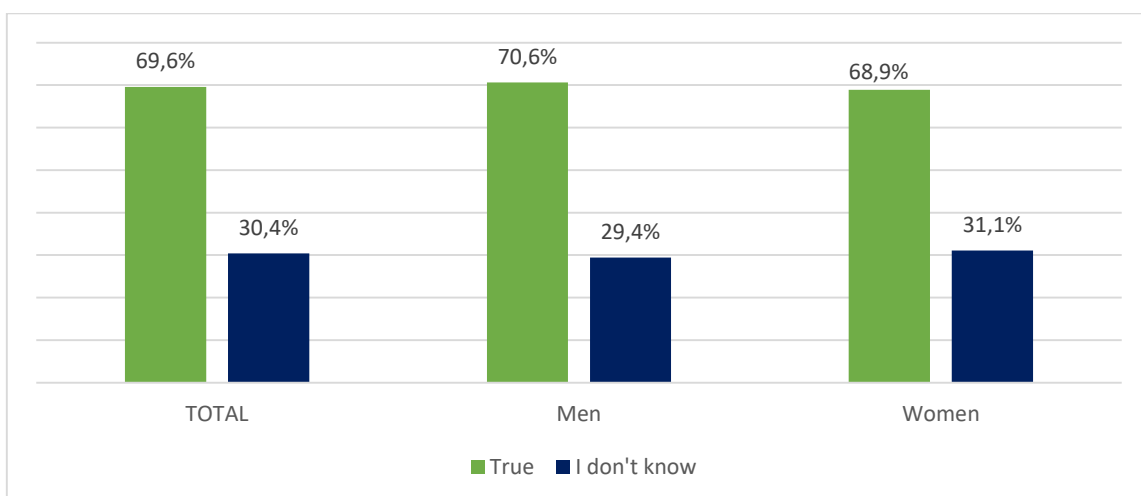


Figure 6 – Respondents’ awareness of the impact of excessive stress as a risk factor for the development of renal disorder

48.1% of respondents consider obesity a risk factor, with men (50.0%) being 3.3% more aware than women (46.7%). However, 20.3% of respondents answered this question incorrectly, and 31.6% admitted that they did not know the answer. Thus, limited awareness of the impact of obesity as a risk factor for renal disorder was found in 51.9% of respondents, of which 50.0% were men and 53.3% were women (Figure 7).

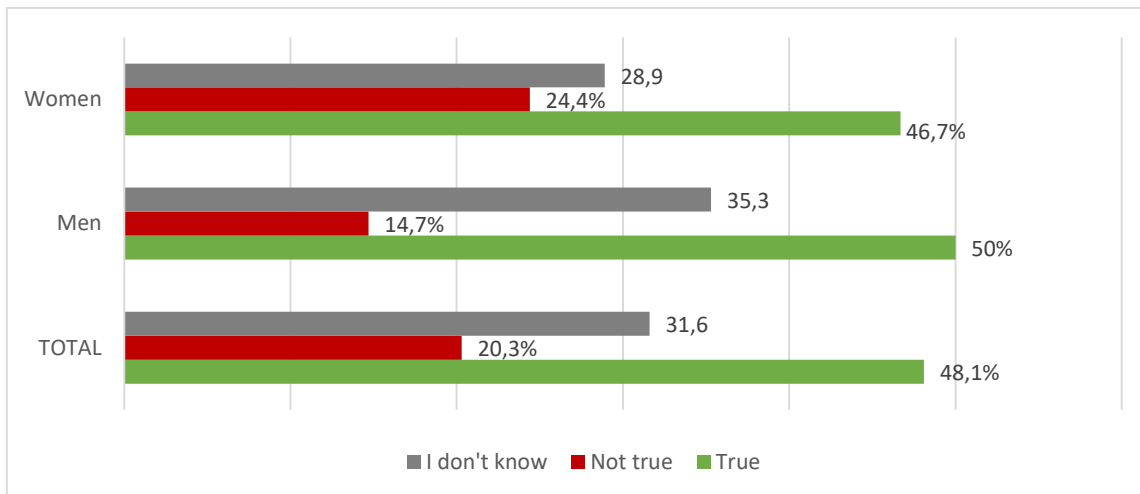


Figure 7 – Awareness of respondents about the impact of obesity as a risk factor for the development of renal disorder

It was found that a third of respondents were aware of risk factors such as diabetes (34.18%), high blood pressure (44.3%), heart failure or heart attack (29.1%), and obesity (48.1%), but the results were not statistically significant in terms of signs and symptoms.

Discussion. According to the results of the sociological survey, it was found that every third respondent (36.7%) did not know that diabetes is a risk factor for renal disorder. More than half of respondents (51.9%) did not know that women are more likely to develop renal complications. About 44.3% of respondents agreed that high blood pressure is a risk factor for renal disorder and can contribute to the deterioration of their condition. About the same number of respondents (48.1%) believes that obesity is also a risk factor. Most respondents (69.6%) are sure that excessive stress affects the development of renal disorder and chronic renal failure.

Conclusion. Patient awareness of risk factors for chronic renal failure is key to the prevention and early diagnosis of this disease. Awareness of factors such as high blood pressure, diabetes, heredity, and poor nutrition allows patients to take timely measures to reduce the likelihood of developing CRF. Patients who are aware of possible risks can change their lifestyle, including improving their diet, giving up bad habits, and engaging in regular physical activity, which has a positive effect on kidney health. Early diagnosis and correction of risk factors help slow the progression of CRF, which reduces the need for expensive treatment at later stages.

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