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ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES

**UIF: 6.1**

**SJIF: 5.7**

**SIS: 1.9**

**Cite Factor: 0.89**

**ASI-Factor: 1,3**

**ISI Factor: 0.96**

**2023/08**

**VOLUME 4**

**ISSUE 8**



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**ACADEMIC RESEARCH IN EDUCATIONAL SCIENCES**  
**SCIENTIFIC JOURNAL**  
**VOLUME 4, ISSUE 8, AUGUST, 2023**

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## ПУТИ ПРАКТИЧЕСКОГО ПРОЯВЛЕНИЯ И РАСПРОСТРАНЕНИЯ ЭКСТРЕМИСТСКИХ И ТЕРРОРИСТИЧЕСКИХ ТЕЧЕНИЙ В СЕТИ ИНТЕРНЕТ

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### АННОТАЦИЯ

Молодежь как социодемографическая группа является активным коммуникантом информационного поля, но сегодня информационное поле становится неуправляемым. Свободный доступ к сети Интернет делает молодежь потенциальной жертвой радикальных идеологий, экстремизма и терроризма. В статье приводятся пути практического проявления и распространения экстремистских и террористических течений в сети Интернет.

**Ключевые слова:** Интернет, идеология, экстремизм, фанатик, ценност.

### ВВЕДЕНИЕ

С развитием научно-технического прогресса интернет становится неотъемлемой частью жизни каждого человека.

На сегодняшний день почти 35 процентов населения земного шара (более 2 миллиардов 400 миллионов человек) имеют доступ к Интернету. Эксперты говорят, что к 2025 году этот показатель составит 65 процентов.

Согласно исследованиям, 70-75% информации в Интернете считается вредоносным для людей. К сожалению, этот показатель с каждым годом увеличивается. Крайне печально то, что большинство людей не могут отличить, что данная информация состоит из лжи и измышлений, что они направлены на отравление человеческого разума, и считают их правдой.

К числу деструктивных идей, направленных на порабощение человеческого сознания на идеологических полигонах, можно отнести религиозный экстремизм, терроризм, миссионерство, «массовую культуру» и различные информационные атаки. В конце XIX века и в начале XX века среди мировых политиков на вопрос «Кто будет править миром» отвечали примерно так: «Кому принадлежит железная дорога». Сегодня не будет преувеличением, если ответом на этот вопрос будет «Кому принадлежит информация»<sup>2</sup>.

Терроризм, который изначально был организован с целью уничтожения представителей политической власти или создания паники среди гражданского населения, со временем изменил свой облик и стал глобальным, маскируя религию, и вызывает озабоченность всего мира. По сути, террористические организации являются марионетками, которые могут играть свою роль в геополитических играх, организованных представителями «третьей руки» в политике.

## МАТЕРИАЛЫ И МЕТОДЫ

Самый эффективный способ повлиять на человека — это повлиять на его убеждения. По этой причине в мире действуют более 800 религиозно-экстремистских организаций под прикрытием религии. Сегодня эти разрушительные силы овладевают человеческим разумом и широко используют СМИ и Интернет для достижения своих злонамеренных целей. По оценкам экспертов, существует более 100 000 сайтов, пропагандирующих различные формы экстремизма.

Например, предоставляя в Интернете неприятные анализы будущего, различных неприятных событий, происходящих в мире, они воздействуют на сознание человека и внушают ему мысль о том, что «этот мир полон несправедливости и угнетения, нет смысла в том, чтобы жить в нем, и единственный способ избавиться от него — смерть». Для этой цели существуют тысячи сайтов, которые вызывают последствия убийства других людей под лозунгом «спасения других от этого угнетающего мира». Воздействие этих сайтов, созданных определенными силами для достижения конкретных целей, можно объяснить обществом, где господствуют идеи индивидуализма, исчезновением общечеловеческих ценностей, слабостью института семьи, отсутствия сочувствия боли других, постановкой личных интересов выше других.

Среди религиозно-экстремистских организаций различные миссионерские секты также используют Интернет для захвата человеческого сознания. Они притворяются невинными и стремятся помочь людям, а на деле истинной целью является совершенно другое.

Также существует множество сайтов и каналов, осуществляющих миссионерскую деятельность в Интернете и СМИ.

Миссионерская и проповедническая деятельность ведется непрерывно, особенно на тысячах спутниковых каналов. К их числу можно отнести такие протестантские

каналы, как «СНЛ», «Схурсх Сханнел», «ТВН» и «Год ТВ». Также сегодня набирает обороты деятельность сект, основанных на зле, которые полностью противоречат гуманизму.

Примером таких сект является организация «Церковь Сатаны», основанная Антоном Лавеем в 1966 году. Через официальные сайты этих сатанистов и интернет-страницы различных групп, следующих за ними, даются учения, пропагандирующие зло, насилие и поощряющие поклонение Сатане против любой религии и добрых идей.

Просмотр и распространение порнографических материалов, пропаганда супружеской измены и проституции, схождение с ума от рок-музыки — такие действия, ведущие к гибели человечества, являются ежедневными ритуалами и «молитвами» членов организации. Возмутительно, что организации, занимающиеся такими гнусными вещами, принимаются и регистрируются как «религия» под видом «демократии» некоторыми странами, выдающими себя за защитников прав человека во всем мире.

В связи с этим стоит отметить, что социальные сети в настоящее время широко используются различными группами и течениями для пропаганды религиозного экстремизма и фанатизма, распространения недовольства в обществе. В процессе ведения беседы в Интернете некоторые молодые люди, не имеющие понятия, неверно истолковывают понятия «земля неверия», «хиджрат», «джихад», «мученичество», «халифат», они втянуты в различные войны и конфликты.

Фанатики, озлобленные, лишены самостоятельного мышления, превратились в зомби религиозно-экстремистскими и террористическими течениями, играющими под дудку различных сил. Сегодня общеизвестно, что они используют боевиков, слепо выполняющих любые приказы своих лидеров, для разжигания различных конфликтов и нестабильности в мирных регионах.

Принимая во внимание тот факт, что Интернет не знает границ, а заблокировать пространственные каналы, транслируемые со спутника, невозможно, в целях защиты населения, особенно молодежи, от деструктивных идей необходимо создать моральный иммунитет в их против таких чуждых идей, через Интернет и СМИ делать обоснованные возражения этим группам, важно давать, доносить до молодежи чисто религиозное учение, воспитывать ее в духе патриотизма, верности Родине.

Сегодня необходимо осознать и помнить всегда то, что внешние факторы, негативно влияют на развитие общества, что СМИ стали мощным инструментом манипулятивного воздействия на общественное сознание и активно используются в

информационном поле разных стран для достижения их политические цели, и что эта опасность не миновала и нашу страну.

Одним из главных требований современной эпохи глобализации является сознательное реагирование на информацию зарубежных СМИ, подход и анализ ее с точки зрения нашей национальной безопасности.

Воспитывать молодежь в духе наших национальных учений и ценностей, уважения к предкам, жить болью народа, считать семью священной, питать их надеждой на будущее – актуальная задача сегодняшнего дня. В борьбе с религиозным экстремизмом, международным терроризмом и чуждыми идеями мы все должны чувствовать свой долг, осознавать и помнить, что мы в ответе за будущее нашей страны.

Мир зол для тех, кто ищет зла,  
мир чужд тому, кто ищет чужеродности.

Кто что-то ищет, тот обязательно найдет.

Мир есть мудрость для того, кто ищет мудрости.

Эти мудрые слова, сказанные несколько столетий назад, сегодня как будто говорят об Интернете, оплетающем мир, как паутина.

На самом деле Интернет — это, образно говоря, один большой рынок. На этом рынке есть всё, кроме человеческой жизни. Точно так же, как покупатель ищет на рынке, пользователь Интернета обязательно найдёт то, что он искал.

Интернет, который был основан американским правительством в военных целях в 60-х годах прошлого века, сегодня служит важным фактором развития науки и развития человека.

В наше время очень сложно представить нашу жизнь без Интернета. Глобальная сеть отлично облегчает общение и обмен информацией между людьми, проживающими в разных уголках мира. Сегодня узнавать новости, покупать и продавать, получать образование можно через Интернет. Итак, возможностей «паутины» много и они все глубже и глубже проникают в нашу жизнь. Такие возможности Интернета являются причиной увеличения числа его пользователей.

Согласно статистике, наибольшее количество пользователей Интернета в мире составляют молодые люди в возрасте от 18 до 30 лет. Потому что люди в этом возрасте очень интересуются новой информацией.

Ни для кого не секрет, что число пользователей Интернета в Узбекистане растет день ото дня и в настоящее время превышает 10 миллионов человек. Как вы знаете, было бы справедливо признать многие положительные стороны Интернета для



человека. С ростом популярности Интернета мы можем наблюдать быстрый рост мошеннического бизнеса. Отравление сознания молодежи путем распространения религиозных материалов и вербовка на различные религиозные течения. Кража конфиденциальных документов, продажа государственной тайны, торговля людьми и реклама наркотиков стали очень популярны в Интернете. В большинстве случаев дети и подростки в поисках признания, внимания или дружбы часто попадают на удочки торговцам людьми в социальных сетях.

Идиологические угрозы и информационные атаки, направленные на овладение сознанием молодежи, растут каждым днём в Интернете, меньше не становятся. В частности, широкое распространение получают такие виды, как манипулирование общественным сознанием, разрушение национальных и духовных ценностей, пропаганда совершенно чуждых менталитету чуждых ценностей, разрушение и изменение исторической памяти людей, кибертерроризм. Эта проблема побуждает каждого здравомыслящего человека быть более осознанным.

Именно поэтому в приветствии Президента прессе и работникам средств массовой информации он сказал: “Хочу снова и снова повторить, что нам не нравится способ возведения какой-то стены в мире информации, завернуть себя в скорлупу и столкнуться с ограничениями. В то же время, если принять во внимание события, происходящие сегодня вокруг нас, в дальних и ближних регионах, злые силы, направленные на введение в заблуждение молодежи, еще не сформировавшей свое сознание и жизненные взгляды, также пытаются использовать возможности Интернет в своих интересах, и мы не должны игнорировать негативные последствия таких усилий”.

По информации, количество страниц, пропагандирующих духовно-нравственную деградацию в Интернете, сегодня составляет несколько сотен миллионов. Еще одна информация, которая призывает людей быть начеку, заключается в том, что более 7000 веб-страниц подрывного характера в глобальной системе действуют в злонамеренных целях.

Высока и роль религиозного фактора в завоевании сердец и умов людей с использованием огромного потенциала Интернета. Потому что Интернет считается одним из самых эффективных инструментов для искажения религиозных представлений и привлечения людей, особенно молодёжи, сознание которых еще не полностью сформировано и чьи религиозные знания очень скупы.

Здесь следует отметить, что есть и другие причины, по которым экстремистские и террористические группы используют Интернет. Включая,

- возможность легкого подключения к интернет-системе;
- невозможность юридически контролировать деятельность в Интернете;
- возможность распространения информации из любой точки мира;
- неограниченная аудитория и высокая скорость передачи информации;
- обеспечение конфиденциальности информаторов;
- Такие удобства, как размещение информации в гармонии текста, изображения и звука, не преминут привлечь террористов.

Если мы обратим внимание на сайты самых ярких фанатов экстремистских течений, то увидим, что они религиозно оправдывают действия деструктивных людей, а себя выдают за защитников религии, провозглашая себя «султаном мученичества» и изображая их как святые, которые беспрепятственно войдут в рай.

Представители религиозно-экстремистского движения подчеркивают толкование понятий «богохульство», «джихад», «хиджрат», «шахид», которые требуют очень деликатного и чуткого подхода, опираясь на фетвы различных неграмотных людей, но в очень действенный способ. Например, экстремистские движения, пытающиеся маскировать ислам и работать от его имени, интерпретируют его так: «Джихад — это священная война мусульман против немусульман». Такая интерпретация является причиной формирования представления о том, что наша религия основана на зле, насилии, войне, кровопролитии, борьбе с людьми других религий.

Согласно религиозной истине, существует три вида джихада: борьба с похотью, с дьяволом и со злом, и их содержание достаточно разъяснено в надежных источниках. Но на религиозно-экстремистских сайтах различные «хранители» пытаются придать этому понятию несвойственный смысл. Ахмад ибн Таймия, один из фанатичных ученых Средневековья, в одной из своих фетв выступал за то, что «необходимо объявить джихад тому правителю, который не управляет государством по шариату». Саид Кутб, лидер «Братьев-мусульман», в своей книге «Знаки на пути» использовал понятие «джихад» в смысле борьбы с неверующими, даже с мусульманами, которые не согласны с его интерпретацией.

Согласно фетвам религиоведов, правильно понявших суть джихада, только лидер мусульман или глава государства, населенного мусульманами, имеет право объявлять джихад по согласованию с учеными высокого уровня этой страны.

Действия безграмотных людей, совершенно несведущих в религиозных науках, но давших себе такие блестящие имена, как «солдаты-халифы», «воины Аллаха», «султан моджахедов» и именующие их Джихадом, есть не что иное, как нашествие.

По этому поводу ученые ряда исламских стран также объявили фетвы, запрещающие террористические акты. В нем говорится: «Такой поступок не оправдывается шариатом и не считается джихадом на пути Аллаха». В этой фетве говорится, что «захват самолетов и захват заложников противоречат шариату».

В то время, когда в Интернете все чаще звучат призывы к людям покинуть свою страну и эмигрировать в очаги конфликтов, ученые Королевства Саудовская Аравия в других своих фетвах призывают мусульман не выезжать за границу для участия в джихаде. Согласно ему: запрещается определять место, где проходит джихад, а также запрещается эмигрировать туда для участия в боевых действиях.

## ЗАКЛЮЧЕНИЕ

Сегодняшняя действительность показывает, что сайты, принадлежащие к экстремистским течениям, используют метод тенденциозного толкования исламских идей для ведения пропаганды против государства, подрыва устоев общества, мира и безопасности в стране, существующей системы и системы управления. В том числе и в вопросе защиты Отечества.

Известно, что в религии Ислам защита Родины возведена на уровень фарзи айн для каждого верующего. Подчеркивается, что предательство и оставление страны беззащитной во время войны – тяжкий грех. Тем не менее, тот факт, что представители религиозно-экстремистского движения объявляют людей, которые служат в государственной армии и погибают в армии за защиту страны, грешниками, чтобы лишить молодых людей статуса гражданства, погасить их патриотических чувств, показывает, что их идеи полностью противоречат учению чистого ислама.

Поэтому желательно проявлять бдительность и осторожность при использовании религиозной информации в Интернете, а также как можно больше ссылаться на сайты в домене Уз. Также необходимо не использовать сайты, которые можно скачать, но содержащие аудио, видео и электронные книги с экстремистским содержанием, безобидные на вид, но осуществляющие пропагандистскую работу против ханафитского мазхаба или отрицающие ханафитский мазхаб.

Это важный фактор, позволяющий избежать электронных ловушек, расставленных экстремистами. Геополитическое поле современного мира и происходящие в нем процессы призывают к бдительности. Время, в которое мы живем, — это время, когда идеологические противоречия в мире усложнились, идеологические полигоны стали сильнее ядерных полигонов.

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## DEVELOPMENT OF RECONSTRUCTIVE-SANITIZING SURGICAL INTERVENTIONS IN CHRONIC PURULENT OTITIS

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### ABSTRACT

The article presents the results of a study on the development of reconstructive-sanitizing surgical procedures in patients with chronic purulent otitis media. The historical aspect of the formation of middle ear surgery, the formation of views on the choice of surgical techniques, taking into account the development mainly towards sparing and hearing-preserving techniques that allow achieving the highest results in functional terms, is considered. The dynamics of the incidence of chronic purulent otitis media in the Samarkand region and on average in Uzbekistan were compared. The analysis of changes in the structure of surgical interventions for chronic purulent otitis media, the dynamics of changes in surgical activity of otorhinolaryngological hospitals in Samarkand. An assessment of the ratio of both sanitizing and reconstructive plastic interventions carried out separately in several stages and simultaneous reconstructive-sanitizing operations over the years is presented, a decrease in the proportion of radical sanitizing techniques with the simultaneous development of reconstructive otosurgery and an increase in the number of plastic and reconstructive interventions is noted.

**Keywords:** chronic purulent otitis media, temporal bone, reconstructive-sanitizing middle ear surgery, middle ear surgery.

**Introduction.** In modern otorhinolaryngology, there are many modifications of reconstructive-sanitizing interventions on the middle ear in chronic purulent otitis media (HCSO) [1]. As a rule, they perform two main tasks: the rehabilitation of a purulent focus and the restoration of the structures of the middle ear in order to improve auditory function – and can be performed both simultaneously and separately in stages [2, 3]. Earlier in time

of occurrence are sanitizing techniques aimed at removing all pathologically altered tissues in the focus of inflammation, as a rule, they are accompanied by mastoidectomy and the formation of a residual cavity [4]. Subsequently, with the development of otosurgery, there are more and more reconstructive interventions, including those performed in conjunction with the sanitizing stage, which allows to achieve the restoration of anatomical relationships and physiological functions of the auditory analyzer [1]. The development of surgery of the middle ear and mastoid process has led over time to a decrease in the number of sanitizing general cavity radical operations on the ear in HCSO against the background of the rapid development of reconstructive otosurgery [5]. When choosing a method of surgical treatment of the chronic inflammatory process of the middle ear, preference is given to more gentle methods with simultaneous or delayed most complete restoration of anatomical structures, which significantly improves the functional results of such operations [6]. First of all, this can be explained by the expansion of the capabilities of modern hospitals, a change in the structure of surgical interventions, an increase in the number of reconstructive plastic interventions, the possibilities of which have significantly expanded today [8].

**The purpose of the study.** To psychoanalyse the exploitation of sanitizing and rehabilitative otosurgery in long-standing pussy otitis media in the verifiable expression and on the exemplification of the kinetics of substitutions in the correspondence of indefinite operative approaches in otorhinolaryngological medical centre of the Samarkand region.

**Materials and methods of research.** The psychoanalysis of the reporting documentation of otorhinolaryngological medical centre and polyclinics in Samarkand, Rosstat collections on the ubiquitousness of consideration and mastoidal cognitive semantics afflictions in Uzbekistan and in the Samarkand region, psychoanalysis of slaviv and strange creative writings fountain-heads in reference to contemporary undergrounds of operative treatment of behaviour towards of HCG and the narration of the publication was carried out. For the intentions of statistical processing of data file the Statistica 6. 0 announcement was used.

**Results and discussion.** For the fundamental time, a fundamental cognitive operation with trepanation of the mastoidal cognitive semantics for the instigative cognitive semantics in the intermediate consideration was performed in 1878 by Schwatze and Eysell, and afterwards this cognitive operation became extensively euphemistic pre-owned in operative participation [9, 10]. In the secondment one-half of the ordinal century, in progression to change the instigative focus in long-standing pussy otitis media,

indefinite modifications of oecumenical opening performances were exceptionally used. The undergrounds of Schwarze, Zaufal, Levin, and Giss are referred to the sanitizing fundamental performances of that continuance [11]. The Bondy cognitive operation is individual of the graeco-roman undergrounds of fundamental operations, on the other hand nowadays it is bounteous of verifiable interestingness [12]. A bounteous assuage procedure is the cognitive operation according to the disposition of V. When victimisation this technique, an consideration decrease is performed by oneself in the more elevated belonging of the double over of the corresponding name, compressible interweaves are exfoliated, and the possibility of off-white openings is performed in anatomical successiveness [13]. The infrequently euphemistic pre-owned undergrounds accommodate the cognitive operation on the Shtake [11, 12]. The communication for its deed is the demonstration of the expansive sinus, on account of when playacting this technique, the duct is bypassed from the front. This disposition became the justification of the endaural fundamental cognitive operation of the Tiss siblings [10]. At the corresponding time, bounteous assuage approaches focused on preserving the anatomical configurations of the intermediate consideration were actively highly-developed and improved. individual of the fundamental interventions with endaural aggrandizement was the Hoffmann technique. At the delimitation of the more elevated partition with the invest in and fore-part partitions of the audile canal, cardinal slashes are made, the integument flutter is separated. The audile ossicles and the sidelong partition of the garret are removed, the antrum is unsealed so all the more that it is accomplishable to participate it with a curet [11, 13]. With endaural access, an cognitive operation is furthermore performed on D. Rosengauz, Burge, Bockstein, Lempert, Gons [10, 14].

The disposition of B. Frantsuzov implies playacting operative interference transauricularly. therein case, the decrease starts out on the borderline of the curlicue leg, then, stretching the out possibility of the audile canal, it is allantoid from in the sky and at the end resulting in a semilunar decrease [10]. Modifications of this disposition are performances on the authority of Y. Genkin, A. Shulgi, Mathis [11, 13]. In his monograph, S. Gershman proffers another disposition of fundamental consideration operation with a composed behind-the-ear and endaural incision. first off an decrease is make-believe on the consideration double over and the compressible interweaves are exfoliated anteriorly, so a scalpel is inserted into the consideration traumatism from the sides flanks of the audile canal, so from the sides flanks of the consideration wound, the decrease of the compressible interweaves of the international audile canalise spread out a integument flutter is abbreviate elsewhere on its more

elevated wall, which is distant from the operative field. The off-white belonging of the cognitive operation is performed on the anatomical course of action pathologically neutered interweaves are removed, the partitions of the off-white opening and the instigation are smoothed [13]. With the aggregation of consciousness and experience, captivating into explanation the formal propinquity of indefinite involvements and the recurrently functionally unfavourable after-effect of fundamental operations, undergrounds of conservative-radical interventions focused on restoring the assistance of the audile instrument began to seem in progression to increase the conservation of the anatomical configurations of the tympanum [9]. individual of the fundamental conservative-radical undergrounds was the Barani cognitive operation and the Undritz disposition [11, 12]. In 1957 theologian planned another conservative-radical procedure – rearward atticotimpanotomy with conservation of the inviolate partition of the audile canal. Subsequently, this procedure was improved, M. Tos performed his have alteration of this operative interference on account of 1970 [12]. on the other hand when victimisation approaches with an inviolate wall, thither were spaces in the tympanic opening that were not approachable for operative manipulations [11, 14]. As a result, approaches chalk up been highly-developed with transitory displacement or emigration of the partition of the audile canal. Displacement of the off-white partition is achieved by mobilizing it by osteotomy and imperative it forward-moving collectively compressible tissues. With transitory removal, the compressible interweaves are fundamental separated, followed by osteotomy and the off-white occlusion is removed, which closer turn back to its accommodation and is strengthened by a muscle-fascial flap. The Wigand disposition incorporates both constituents of the procedure with the conservation of the partition and the procedure implying its emigration [12, 15]. A adapted mastoidectomy highly-developed by Farrior is furthermore euphemistic pre-owned to change indefinite classifications of cholesteatomas. This procedure is carried elsewhere by consideration aggrandizement and includes the uttermost augmentation of the cadaverous belonging of the audile canal, transcanal antecedent atticotimpanotomy with the reclamation of the antecedent atticus opening [12]. In 1986, N. Mishenkin planned the procedure of sanitizing performances with HCSO victimisation low-frequency ultrasound. If the instigative cognitive semantics is constricted to the limits extent of the tympanic cavity, he recommends playacting an intrameatal sanitizing microsurgical cognitive operation victimisation a "closed" disposition. Currently, in progression to change the diseased cognitive semantics in the tympanum, Anal-wall-upmastoidectomy (CWUM) is virtually



recurrently euphemistic pre-owned i. mastoidectomy with conservation of the rearward partition of the audile canal. It acknowledges you to abbreviate the postoperative period, carry through higher operational consequences and a more appropriate decorative effect. As a rule, it is performed in antiparallel with tympanoplasty and recall of the audile ossiculum chain. The deprivation of this procedure is the jeopardy of fall back and in consequence cardinal months or a gathering subsequently its implementation, a secondment stagecoach of operative treatment of behaviour towards is required, allowing to determine the consideration of the tympanic cavity. At the corresponding time, virtually interventions are performed nailed down the international audile canalise victimisationing epithympanic aggrandizement [14]. Canal-walldownmastoidectomy (CWDM), i. mastoidectomy with emigration of the rearward wall, is presently euphemistic pre-owned to some degree infrequently [15]. moreover to the reclamation of the focus of infection, thither is a interrogatory of restoring the configurations of the tympanum opening and material off-white in progression to make restitution the assistance of the audile instrument and correspondent collective reclamation of patients. In connectedness with this situation, in augmentation to sanitizing operations, anaplasty of the mastoidal and the tympanum was actively developed. In 1879, the physician Berthold performed a extraordinary myringoplasty for the fundamental time, during which the insufficiency of the tympanum was unsympathetic with a complimentary integument flutter [6].

In consequent second childhood a consubstantial cognitive operation was furthermore successfully euphemistic pre-owned by Politzer and Tangemann [8]. In the secondment one-half of the ordinal century, both auto- and allografts were actively euphemistic pre-owned to accelerate the insufficiency in the eardrum. For myringoplasty, not by oneself integument airfoils were euphemistic pre-owned on the other hand furthermore the material fascia, the meninx mater. In 1978, a procedure of corneal myringoplasty was planned [12]. To date, virtually recurrently in progression to make restitution the eardrum, the material dashboard and the suprachrachium are used. on the other hand gristle transplant operation is gaining popularity, as it keep away from postoperative complications. operative aggrandizement is performed either victimisationing the pad technique, i. nailed down an consideration incision, or victimisationing the overlayer technique, when aggrandizement is if nailed down the consideration canalise [7]. In contingency of insignificant insufficiencies of the tympanic membrane, a suprachrachial-cartilaginous flutter is euphemistic pre-owned on the vascular pedicle, parturition it victimisationing the stanchion procedure planned by Dornhoffer,

and in contingency of totality defects, they incline towards to application the gristly "shield" procedure in the Duckett alteration [15]. on account of virtually patients with HCSO with agonize from many connectors of the sound-conducting transaction at on a former occasion when playacting rehabilitative performances in progression to full make restitution function, it is all-important to appropriate into explanation the rigourousness of diseased substitutions in the intermediate ear. In connectedness with this situation, on all sides of the intermediate of the antepenultimate century, Wulstein planned five-spot alternatives for tympanoplasty. The fundamental classification is euphemistic pre-owned when by oneself the tympanum is annihilated and each over-the-counter configurations of the intermediate consideration are preserved. The secondment classification is when, in augmentation to the eardrum, the application of the hammering is destroyed. The thirdly classification of tympanoplasty according to Wulstein is applicative to the devastation of the tympanum with the devastation of the hammering and anvil. The one-quarter classification of cognitive operation is performed when, moreover to the above-named structures, the support members are furthermore destroyed. The one-fifth classification is when reparation the support in an oval-shaped windowpane [12]. Currently, when restoring the concatenation of audile ossicles, the measure of diseased substitutions in the tympanic opening is furthermore appropriated into account. fragmentary (PORP) or totality (TORP) prostheses make-believe of hydroxylapatite or titanium are euphemistic pre-owned in contingency of monolithic destruction to the audile off-white concatenation [17]. The examination stagecoach of tympanoplasty should always be the refurbishment of the eardrum. At the corresponding time, a gristle transplant be required to be additionally situated between the prostheses and the reconstructed tympanum in progression to preserve tightness in the postoperative amplitude [15]. In progression to accomplish a more appropriate operational result, to anticipate the exploitation of involvements and gets back moreover to restoring the morphology of the tympanum, it is all-important to reassemble the configurations of the material off-white subsequently fundamental surgery. In 1963, I. Potapov, and in 1977, N. Preobrazhensky, subsequently fundamental sanitizing operation on the intermediate ear, performed mastoidoplasty with gristle and off-white grafts, which importantly built the operational determination of the cognitive operation and contributed to the epidermization of the baccilar opening. In contemporary second childhood contemporary employers in otosurgery chalk up been actively developing. It has be remodelled accomplishable to application laser operation approaches in HCSO for the protected and efficacious emigration



of granulation, hyperplastic mucosa, all the more in spaces much as the cubby-hole of the ammunition windowpane and the facial nerve. Endoscopic interventions for long-standing otitis media chalk up furthermore be remodelled distributed. Endoscopes buoy ascertain residuary phenomena of the affliction in clandestine cavities, and buoy furthermore be euphemistic pre-owned for control intentions when removing cholesteatoma of the material off-white cavities, thereby reduction the oftenness of mastoidectomies and deliberate second-stage interventions. surrounded by the patients hospitalized in the otorhinolaryngological subdivisions of Samarkand, the comparative relation of this pathology has attended diminution in contemporary second childhood including surrounded by the children's population. The coefficient of expansion coefficient between the occurrence of afflictions of the consideration and mastoidal and chemist's shop come to see is 0. 79, i. thither is a orchestrate connectedness between these cardinal processes: with an aggrandizement in morbidity, the commensurate of chemist's shop come to see to the polyclinic furthermore enlarges ( $p < 0$ . contempt this, operative sprightliness in otorhinolaryngological medical centre has accrued in contemporary years. The character of performances for HCG take care of to aggrandizement with a summit in 2015. At the corresponding continuance, in the constitution of performances for this pathology until 2017 fundamental interventions on the consideration predominate over dominate on account of 2017, when it transform into accomplishable to manipulate conservative-radical approaches and sanitizing hearing-preserving operations, the comparative relation of graeco-roman fundamental interventions is decreasing.

At the corresponding time, the character of rehabilitative performances reached 60%, and fundamental performances on the consideration did not be superior to 20%. The deed of operative interventions for HCG in the sovereign state Clinical infirmary No. 1 in the amplitude from 2015 to 2018 furthermore denatured in its constitution in relation to an aggrandizement in the participation of conservative-radical techniques. on the authority of CSOCB No. 1, the participation of sanitizing and rehabilitative approaches denatured as come after in 2015, fundamental sanitizing performances on the consideration – 65%, reconstructive-sanitizing performances – 14%, rehabilitative performances – 21%. In 2020 fundamental sanitizing performances – 7%, reconstructive-sanitizing performances – 8%, rehabilitative performances – 85%. generally, for the amplitude from 2015 to 2020, we buoy vestige a piecemeal diminution in the character of oecumenical opening sanitizing interventions with a contemporaneous aggrandizement in rehabilitative operations. The application of indefinite operative



approaches in Samarkand in the treatment of behaviour towards of HCG as a proportion for 2018 is as come after fundamental consideration operation 35%, rectification of the tympanic opening 18%, tympanoplasty 30%, abstracted atticotomy 11%, tympanotomy 4%, sanitizing performances with tympanoplasty 2%. At the corresponding time, the possibility of choosing a hearing-preserving operative interference is higher in patients with few affliction experience.

**Conclusions.** Over time, otosurgery has undergone significant changes in its development. From relatively simple methods of sanitizing operations, the main goals of which were primarily the elimination of the focus of chronic inflammation and the prevention of complications, they gradually moved to more complex gentle techniques, interventions involving simultaneous restoration of the structures of the tympanic cavity and the mastoid process, reconstructive plastic interventions that allow to achieve maximum restoration of anatomical relationships and the function of the auditory analyzer. To date, the proportion of reconstructive and reconstructive-sanitizing interventions prevails in otorhinolaryngological hospitals. The incidence of diseases of the ear and mastoid process by 2019 tends to decrease both in the Samarkand region and in the whole territory of the Republic of Uzbekistan. At the same time, the incidence has decreased not only among the adult population, but also among people under the age of 18. The dispensary registration of such patients changed in accordance with the change in the incidence rate, reaching a peak by 2015 and decreasing by 2020. Despite the decrease in morbidity in recent years, surgical activity in otorhinolaryngological hospitals in Samarkand is increasing, which is primarily due to an increase in the number of reconstructive plastic interventions.

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## ДИНИЙ БАҒРИКЕНГЛИК ҒОЯЛАРИ АСОСИДА ЁШЛАРНИ ТАРБИЯЛАШДА ТАРИХИЙ МЕРОСИМИЗНИ ТУТГАН ЎРНИ

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### АННОТАЦИЯ

Ушбу мақолада муаллиф томонидан Ватан тарихини, ўқитиш ва ўрганиш жараёнида чуқур илмийлик, холислик, тарихий ҳақиқатнинг устиворлиги асосий ва бош йўналиш бўлиши лозим деб белгиланган. Ўзбекистон тарихи фанидан бир нечта мисоллар келтириб, бизнинг минтақамизда бошқа минтақалардан фарқли ўлароқ ҳар-хил диний эътиқодлар ортидан ҳеч қачон урушлар бўлган эмас, яъний диний бағрикенглик ғоялари шу ҳудудда яшовчи миллатларда қадимдан бошлаб шаклланиб келганлигига урғу берилган. Ватан тарихининг бошидан охирига қадар сингиб кетган асосий ғоя-оташин ватанпарварлик, диний бағрикенглик, инсонпарварлик каби улуғ фазилатларга қаратилмоғи ҳамда миллий кадриятларга ҳурмат руҳи билан суғорилган бўлиши ва миллий ғоя ва миллий мафқуранинг камол топишига хизмат қилиши даркорлиги такидланган. Бизнинг асосий вазифамиз армиямизда хизмат қилаётган ёшлар билан маънавий-маърифий тарбияни тўғри йўлга қўя билишимизда.

**Калит сўзлар:** Ватан, Диний эътиқод, бағрикенглик, маънавият, тарихий ҳақиқат.

### ABSTRACT

In this article author shows that on acquiring the history of the Motherland we should pay attention on the mainly truly history and scientific trustful materials of history. Giving examples from history of Uzbekistan, author greatly paid attention on in our territory in difference from other regions that never been any conflicts in religious base, so he says that history of our religious was born many centuries ago. On studying history of Uzbekistan should lead only patriotic ideas, tolerance, humanitarianism and to serve only for national ideology. The main kind of our educational system should be spiritual-educational side for educate youth who serve in our Army.

**Keywords:** Motherland, humanitarianism, spirituality, enlightenment, duty

### КИРИШ

Ҳозирги кунда Олий Ҳарбий билим юртлари олдида турган энг муҳим вазифалардан бири бу маънавий онги юқори



даражада шаклланган ҳарбий кадрлар етказиб бериш мақсади турибди. Маънавий онгининг ажиралмас қисмларидан бири бу диний бағрикенглик ҳисобланади. Бу масалани омалга оширишда ижтимоий сиёсий фанлар олдида асосий мақсад бўлиб, курсант ва тингловчиларда маънавий онгни шакллантириш вазифаси турибди.

Маънавий онги шаклланмаган шахснинг дунё қараши тор ва ҳар қандай таълим ва қарашлар гирдобига тушиб қолаверади. Бу эса ўз навбатида жамиятни порокандалик ботқоғига етакловчи омил ҳисобланади.

Албатта ёшларни диний бағрикенглик ғоялари асосида тарбиялашда тарихий хотирани ўрнини босувчи восита йўқдир.

Ҳаммамизга маълумки, собиқ иттифоқ даврида ҳақиқий тарихимиз бузиб кўрсатилиб келинди. Биз энди мустақил давлат сифатида деярли унитилаётган ўтмишимизни бутун борлиқ маҳобати ва буюклиги билан кўз олдимизга келтирмоқдамиз. Жонажон тарихимиз саҳифаларини вароқлар эканмиз, Марказий Осиё халқлари қадимдан бир тарихий тақдирга, бир илдизга эга эканлигини, уларнинг тарихий ва маданий мероси умумий бўлганлигини кўрамиз.

Эндиликда халқимизда жонланган ўзлигини англаш ва миллий уйғониш ҳиссиётини ривожлантириш, ёшлар онгига ўтмиш тарихи, ота бобалар руҳини, моддий-маънавий маданиятга бўлган меҳр ҳурмат ва кадр-қиммат ҳис-туйғуларини сингдириш тарих фанининг асосий вазифасидир.

Диний эътиқод, ҳуқуқ адолат, ахлоқ яхшилик, санъат гўзалик, сиёсат давлат билан шуғулланса тарих ўтмиш ҳақиқатлари билан шуғулланди. Тарих ўтмишимизни чуқур ўрганиш билан келажагимизни ёртиб беради.

## АДАБИЁТЛАР ТАҲЛИЛИ ВА МЕТОДОЛОГИЯ

Ватанимиз тарихини ёзиб қолдирган буюк тарихшунос аждодларимиз Абдураззоқ Самарқандий, Абу Райхон Беруний, Ҳондамир, Наршахий ва бошқа тарихий воқеаларни ёритиб қолдирган тарихчилар асарлари ўтмишда буюк воқеалар билан бирга халқимиз бошига тушган кулфатлар босқинчилик юришлари ҳақида ҳам хикоя қилганлар. Бу манбалар шу нарсдан далолат берадики инсоният тараққиёти давомида йўл қўйган хатосидан тўғри хулоса чиқариб олмас экан, бундай кулфатлар шу жамият бошига қайта-қайта тушаверади.

Ўзбекистон Республикасининг биринчи Президенти Ислон Каримовнинг "...тарихга мурожаат қилар эканмиз, бу халқ хотираси экинлигини назарда тутишимиз керак. Хотирасиз баркамол киши бўлмаганидек, ўз тарихини билмаган кишининг келажаги ҳам бўлмайди", [1,12]-деганлари айни ҳақиқатдир.

Ёшларни диний бағрикенглик ғоялари асосида тарбиялашда тарихий меросимизни ўрганишда албатта қуйидаги вазифаларни ўз олдига қўйган ҳолда ўрганмоқ зарур:

Ватан тарихини ўқиш ва ўрганиш жараёнида ёшларда тарихий билимлар, илмий-назарий тушунчалар ва тасаввурлар шаклланиши лозим. Чунки воқеа ва ҳодисаларни билмасдан, улар ҳақида тушунча ва тасаввурга эга бўлмасдан туриб ғоявий-сиёсий дунёқараш ҳақида гап юритиш мумкин эмас; Масалан тарихий ҳақиқат шундан далolat берадики бизнинг минтақамизда бошқа минтақалардан фарқли ўлароқ ҳар-хил диний эътиқодлар ортидан ҳеч қачон урушлар бўлган эмас. Яъний диний бағрикенглик ғоялари шу ҳудудда яшовчи миллатларда қадимдан бошлаб шаклланиб келган.

Тарихимизда бизга маълум бўлган маълумотлар борки уларни ёшларга тўғри талқин қилиб етказиш уларда диний бағрикенглик туйғуларини юксак даражада шакллантиришга хизмат қилади.

Жаҳон динларининг шаклланиш жойлари ўзга ҳудудларда бўлса ҳам уларнинг такомилланиши бизнинг ўлкада юз берган. Масалан: тарихимизнинг I-IV асрларини ўз ичига олган Кушон подшолиги хусусан унинг ҳукмдори Канишка даври Ҳиндистон ҳудудлари эгаллангандан сўнг буддизм динини кенг ҳаракат қилган. Хатто кейинчалик буддизм кенг раванқ топган ва ривожланган Хитой империясига ҳам Марказий Осиё ҳудудлари орқали бу дин кенг тарқалган. Бунга гувоҳ Сурхондарё вилояти ҳудудларидан топилган археологик топилмалар ҳисобланади. Ҳудди шундай маълумот бу мелодий I асрдан XI асргача Марказий Осиё ҳудудида христиан динини кириб келишини мисол тариқасида айтишимиз мумкин.

Хаттоки бу дин кейинчалик раванқ топган Европа мамлакатларидан олдин Марказий Осиё ҳудудларига кириб келган.

Фақатгина VIII асрда ислом динининг кириб келганлиги бу диннинг бу ҳудудда барҳам топишига олиб келган. Ундай бўлса ҳам бошқа дин вакиллари қирғин қилинмаган ҳолда балки ислом динини афзалликларини ҳамда бу ҳудуд аҳолисига мослиги тушунтирилгандан сўнггина бу динлар барҳам топган.

Бизга бугунги кунда маълум бўлган Исроил-Фаластин ўртасидаги ўзаро зиддиятлар бу нафақат ҳудудлар учун бўлаётган уруш сифатида олишимиз мумкин балки бу икки дин ўртасидаги кураш деб қарашимиз мумкин. Лекин ўлкамиз тарихида шундай маълумотлар борки яҳудий миллатига мансуб шахсларнинг ўрта асрларда бошқа ўлкалардан қувғин қилиниши уларни Бухоро шахрига келиб жойлашишларига сабаб бўлган. Шу давр давомида кўчиб келган яҳудийларни бу ҳудудда яшовчи халқ билан урф-одатлари яқинлашганликлари кўришимиз мумкин.



Бу худудда яшовчи халқнинг диний, бағрикенглиги улар ўртасида ҳеч қандай низоларни келиб чиқишларига йўл қўймаган. Бухоро жугутларининг диний эътиқодлари сақлаб қолишларига имкон яратиб берган.

Тарихимиз зарварақларида бундайин мисолларни кўплаб келтиришимиз мумкин. Соҳибқирон Амир Темур даврида бундай бошқа дин ва миллат вакилларига бошпана бериш ўз ҳимоясига олганлиги ҳақидаги маълумотлар кўплаб сақлаб қолинган. Улардан бири Соҳибқироннинг Ироқ-Эрон давлатларига ҳарбий юришни мисол тариқасида оладиган бўлсак бу даврда Ироқ худудида мусулмонларнинг шиа йўналишига мансуб аҳолини қирғин қилинишининг устидан чиқади. Амир Темур ўзининг одилона сиёсати туфайли бу ердаги шиа ва сунийлар ўртасидаги урушга барҳам беради ҳамда бу худудда шиалар ҳомийси деган ном олади.

Соҳибқирон авлодидан бўлган Заҳриддин Муҳаммад Бобур Ҳиндистон худудларини ўз қўлига киритгандан сўнг бу худуд аҳолисини ёппасига исломлаштиришга киришмади балки ҳиндларнинг эътиқод қилувчи ўз динлари учун кенг имкониятлар яратиб улардаги одамларни қурбон қилиш ҳамда дафн этиш маросимларида марҳумнинг яқинларини қўшиб ўтда ёндиришларига чек қўйди. [3,132]-

Бу тарихий фактлардан кўришиб турибдики диний бағрикенглик миллат минталитетига қўшилиб кетган бўлиб у ўзбек халқи маънавий дунёқарашининг ажралмас қисмига айланган.

Шунга қарамасдан тарихимизда минтақамизда диний низолар келиб чиқмаган. Шунинг учун ҳам тарихий меросимизни ўрганишда қуйидагиларга амал қилишимиз лозим;

Биринчидан, Ватан тарихини ёритиш, ўқитиш ва ўрганиш жараёнида чуқур илмийлик, холислик, тарихий ҳақиқатнинг устиворлиги асосий ва бош йўналиш бўлиши лозим;

Иккинчидан, Ватан тарихининг ҳар бир сатри, ҳар бир варағи миллий қадриятларга ҳурмат руҳи билан суғорилган бўлиши ва миллий ғоя ва миллий мафқурасининг камол топишига хизмат қилиши даркор;

Учинчидан, Ватан тарихининг бошидан охирига қадар сингиб кетган асосий ғоя - оташин ватанпарварлик, диний бағрикенглик, инсонпарварлик каби улуғ фазилятларга қаратилмоғи керак;

Тўртинчидан, Ватан тарихи фани мустақил республикамизнинг сиёсий, иқтисодий, маданий-ижтимоий қадриятларининг янада мустаҳкамланиши ва равнақ топишига хизмат қилиши, давр ва замон билан ҳамнафас бўлмоғи айтиш мумкин.

Бугунги кунда Ватан тарихини ёритишнинг илмий-методологик йўналишлари кўрсатиб берилди. Бу йўналишлар қуйидагилардан иборат:

- халқимиз ўтмишидаги миллат тақдири билан боғлиқ бўлган тарихий жараёнларни чуқур илмий тадқиқ этишда ҳолисона ёритиш;

- Ўзбекистоннинг янги тарихини ёзишда тарих босқичлари ва ижтимоий-сиёсий тараққиёти узлуксиз жараён эканлигини назарда тутиш, тарихийлик ва ворисийлик тамойилларига амал қилиш;

- Ўзбекистон халқининг буюк тарихий меросга эга эканлиги ва умумбашарият қадриятларига муносиб ҳисса қўшганлигини эътироф этган ҳолда ўзига хос давлат қурилиши анъаналари ва уларга нисбатан фикрлар, қарашлар хилма-хиллигини ҳисобга олиш;

- “Ўзбекистоннинг янги тарихи”нинг ҳар бир қисми ва бўлимларини ёзишда бирёқлама, субъектив ёндошувларга йўл қўймасдан ҳолисона тадқиқот усулига амал қилиш;

- “Ўзбекистон тарихи”га оид воқеа-ҳодисаларни ёритишда унинг кўхна Турони-замин, Туркистон тарихининг таркибий қисми бўлганлигини ёдда сақлаш;

- Ўзбекистон тарихи дунёнинг турли минтақаларида содир бўлган ижтимоий-тарихий воқеа-ҳодисалар ҳамда жаҳон тараққиёти жараёнлари билан узвий боғлиқ эканлигини ва уларнинг бир-бирига ўзаро таъсирини ҳисобга олиш;

- ёшларни миллий истиклол ғоялари, ватанпарварлик ва умуминсонийлик руҳида тарбиялашда тарихий воқеа-ҳодисаларнинг аҳамиятини эътиборга олиш.

## ХУЛОСА

Хулоса қилиб Ўзбекистон Республикасининг биринчи Президенти Ислоҳ Каримов шундай дейдилар: “Модомики, ўз тарихини билган, ундан руҳий қувват оладиган халқни енгиб бўлмас экан, биз ҳаққоний тарихимизни тиклашимиз, халқимизни, миллатимизни ана шу тарих билан қуроллантиришимиз зарур. Тарих билан қуроллантириш, яна бир бор қуроллантириш зарур”. [2,113]- Бу вазифаларни бажариш учун нима қилиш керак. Ватан тарихи фанининг вазифаларини Президентимиз лўнда қилиб кўрсатдилар. “Фаннинг вазифаси келажагимизнинг шакли-шамойилини яратиб бериш, эртанги кунимизнинг йўналишларини, табиий қонуниятларини, унинг қандай бўлишини кўрсатиб беришдан иборат деб, тушунаман.

Тарихий воқеа, ҳодисаларни ўрганиш, таҳлил этиш ва ёритишда ҳолислик-ҳаққоний, адолатли ёндошув муҳим методологик қоидадир. Ҳолислик қоидасини тарихий воқеа, ҳодисаларни ўрганаётганда улар билан боғлиқ бўлган барча фактларнинг ҳеч бир истисносиз бутун мажмуи



билан бирга олиб текширишни, аниқ ҳаққоний далилларга асосланишини талаб қилади.

Тарихни ўрганишда тарихийлик методологияси муҳим аҳамиятга эга. Тарихийлик қондаси воқеа-ҳодисаларни ўз даврининг аниқ тарихий шароитидан келиб чиққан ҳолда ўрганишни тақозо этади. Воқеа - ҳодисаларни ўрганишда тарихий боғланиш, тарихий ривожланиш жараёнига эътибор қилмоқ зарур. Ҳар бир ҳодиса қандай тарихий шароитда, муҳитда бўлганлигини бу ҳодиса ўз тараққиётида қандай асосий босқичларни ўтганлигини, кейинчалик у қандай бўлиб қолганлигини билиш тарихийлик қондасининг асосий талабидир. Масалан, биронта давлат фаолиятига тарихийлик нуқтаи назаридан туриб баҳо бермоқчи бўлсак, биринчидан, у қачон, қандай тарихий шароитда пайдо бўлди, иккинчидан у ўз тараққиётида қандай босқинчиларни босиб ўтди, учинчидан, у ҳали ҳам мавжудми?, ҳозир қай аҳволда, қандай бўлиб қолди?, деган саволларга аниқ жавоб бериши зарур бўлади.

Тарихийлик методологияси халқнинг ўтмишини, ҳозирги замон ва келажагини ягона табиий жараён деб, ўтмиш ҳозирги замонни тайёрлайди, ҳозирги замон келажакни яратади деган тараққиёт қонуни асосида қарайди. Инсоният ана шундай умумий йўлдан бораётган экан, порлоқ ҳаёт, турмуш қурмоқчи бўлган авлод тарих фани орқали ўз ўтмишини яхши билмоғи лозим. Ўтмишни, аجدодларимиз тарихини қанчалик яхши билсак, англаб етсак, ҳозирги замонни, мустақиллигимиз мазмунини шунчалик мукамал тушунамиз, келажакни тўғри тасаввур этамиз. Шунингдек, ҳозирги замонни бугунги авлоднинг бунёдкорлик фаолиятини тўғри идрок этиш ўтмишни, тарихимизни чуқур англашга кўмаклашади.

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**CULTURAL CONFLICT IN BAPSI SIDHWA'S "AN AMERICAN BRAT"****Ainuiddin Muradi\*<sup>1</sup>****Razia Sadri\*<sup>2</sup>**

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**ABSTRACT**

Bapsi Sidhwa is a postcolonial writer from South Asia, Pakistan. She is best known for her novel "An American Brat." In the novel she depicts the story of a sixteen years old Parsee girl. Parsee people are the followers of Zoroastrian religion, they do worship sun. Her novel is presented the socio-cultural background of Parsee community and cultural antagonism among different nations. 'An American Brat' throws light on the cultural antagonism; it is represented through the character of Feroza the protagonist. The novel talks on the transformation of Feroza; she has tackled the cultures of Pakistani, Parsee and American. She actually becomes an American brat by adopting the American culture. The antagonism enters into Parsee life when Feroza adopts the American culture. In the novel, it is seen that new generation believes that inevitable to do the marriages outside of faith. This study is an attempt to reveal the cultural conflict through the character of Feroza.

**Keywords:** Cultural Conflict, Parsee community, American Brat, Bapsi Sidhwa.

**Introduction**

The significance of culture in the development of societies and their people cannot be denied during the history of humankind. It becomes the driving force for major issues as conflict or war and peace (Akhter, 2020). Culture can be defined as the beliefs, customs and learned ways of living which is socially inherited possessed by persons in virtue of their membership in social groups. Society is the place where the people are living with different cultures, religions, and races. The statistics of cultural conflict might be high rather than the society. Generally, conflict occurs across cultural boundaries and problems of intercultural miscommunication and misunderstanding.

Conflict is a characteristic of all human communities; theoretically it is an aspect of all social relationships. Avruch (1991) states that "Conflict is competition by individuals or groups over incompatible goals, rare properties, or the sources of power needed to acquire them" (p.1).

This clash is determined by individuals' comprehension of aims, resources, and power and such comprehension might differ greatly among individuals. Further, conflict is related to language, religion, race, nationality, geographical area, social position, business, organizations, and parties. One of the perceptions is culture; it is very important and invaluable part of human beings living in any society. Also culture can be the identity of the particular group and the cause of some conflict among the groups.

People have their own culture, different people perceive culture differently and that is why it may be illuminated in many ways. Sarup, M. (1994), states that mutual programming of the mind is called culture which has the power to separate the people of one society from another. Culture is a set of specific worldwide values and has a state of human excellence.

### **The Goal of the Study**

The main goal of this study is to reveal the cultural conflict in Bapsi Sidhwa's novel "An American Brat" between East and West nations and its effect on young generation where all nations, countries and communities come closer to each other and all are affected by others' culture, language, and civilization.

### **The Significance of the Study**

Sidhwa (1994) investigated the issue of the cultural clashes in her fourth novel in detail. She said that the subject of "An American Brat" obviously deals with cultural conflict. Imtiaz (2011) explains that cultural shock is handled in "An American Brat, when people migrate from sub-continent to western countries for studying, they meet with cultural shock. When people of Asia migrate to western countries for education and employment, they have to face cultural conflict.

This novel "An American Brat" explains the western culture and its traditions are opposite to the traditions and culture of the East. The novel represents the story of (Feroza) a young girl who experiences three cultures, first Parsi culture which is the culture of her community, second the Muslim culture of Pakistan that is her native country and third is the culture of America where she has sent to study.

The significant of the conducted research is to reveal the cultural conflict between East and West. In the world where all nations, countries and communities come closer to each other and all are affected by others' culture, language, and civilization. The researcher investigates cultural conflict which it creates.

### **Methodology**

The researcher applied the library research methodology to collect data and important materials from academic articles, journal and books about "Cultural Conflict in Bapsi Sidhwa's 'An American Brat'."

## Literature Review

Avruch (1991) asserts that culture always is shown in two ways (generic and local). Generic culture is a feature of human beings, an adaptive characteristic of our species on this planet for at least thousands years. Local culture is a complex system of human life encodes symbols, schemas, and other sorts of cognitive representations created, shared, and transmitted (socially reproduced and inherited) by individual as well as social groups (p.4). We cannot find a group of people who are living without culture in a reign, even single person. Everyone whether in group or in individual; live(s) with a specific culture. Culture is playing very significant role in human being life. Only culture can shape up the personal and group life in a community. In the modern world diaspora is a displaced community from homeland, they emigrated ethnical group who leave their homeland for prosperity. They are always in minority in the host country and often struggle to keep their ethnical identity (Velvizhi and Thavaseelan 2019).

According to T.S. Eliot (1948), there are three types of cultures, including individual culture, group or class culture and culture of whole society. He states:

The culture of the individual depends upon the culture of a group or class, and the culture of a group or class depends upon the culture of the whole society to which that group or class belongs. Therefore, it is the culture of the society that is fundamental. (21)

So, what is the cultural conflict from the perspective of Bapsi Sidhwa in “An American Brat”?

Sidhwa has depicted the story of Feroza sixteen years girl from Parsee community of Lahore in Pakistan through “An American Brat.” The story is surrounded by the adventurous journey of a young Parsee girl, Feroza from Lahore (the third world) to America (the first world). Parsee is one of the two Zoroastrian societies originally from Iran; they had migrated from their homeland (Iran) to Gujrat (India) between 8<sup>th</sup> and 10<sup>th</sup> centuries. Feroza is influenced by Islamic culture which is dominant culture in Pakistan and become more orthodox rather than her parents (Cyrus and Zareen). She tries to observe the cultural rules completely, and attempts to purify their family based on the Islamic culture. Sometimes Feroza criticizes her parents if they do not observe the cultural rules. Sidhwa writes that Feroza, “Won’t even answer the phone anymore.” (p.10) Zareen mocks her daughter and says, “I told you, don’t be silly. No one is going to jump out of the phone to bite you.” (p.10) Feroza’s parents think that she must be saved from being more Islamic orthodoxy. Her mother becomes apprehensive that Feroza is getting more and more involved with Islamic culture. Zareen states:

I went to bring Feroza from school today. I was chatting with mother Superior... in the car, she said: ‘Mummy, please don’t come to school dressed like that.’ She objected to my sleeveless sari

blouse! Really, this narrow-minded attitude touted by General Zia is infecting her, too. I told her: ‘look, we are Parsees, everybody knows we dress differently. (p.11)

After this moment Zareen and Cyrus apprehend about another type of loss of identity. They scare that Feroza is strictly involved with Islamic culture and she is losing her originality that is Zoroastrian and will marry with a non-Parsee boy. To find solution or to change Feroza’s mind, they take the decision to send her on a holiday to America. Cyrus says, “Travel will broaden her outlook, get this puritanical rubbish out of her head.” (p.14) When Khutlibai Zareen’s mother comes to know, why Zareen and Cyrus are sending Feroza to America. She gets angry and thinks may be her granddaughter completely lose the Zoroastrian religion and become more non-Parsee girl rather than now she is. Zareen says, she is going just for 3 months and she adds:

You have no idea how difficult Feroza’s been... all this talk about Islam, and how women should dress, and how women should behave, is turning her quite strange. (p.30)

Sidhwa points out that clash between two different cultures start from this event. It can be called cultural conflict between two different cultures (Islamic and Zoroastrian). That is the central theme in “An American Brat.” Culture has two sides (negative and positive), it can be the cause of unity and also hostility in a society. There is no problem for natives in their homeland, but there are a lot of challenges for immigrants or refugees. We can find the cultural antagonism in Feroza’s experiences.

Life is getting more and more complicated in Feroza’s journey. She is sent to America to hope of saving Parsee culture. Unfortunately, when she reaches to the first world (America) become anti-Parsee girl. She comes across with a new culture, which is completely different from her culture that she has never faced before. She humiliates by police and pushes her down, prejudice and demoralization in Kennedy Airport. She shouts: “To hell with you and your damn country. I will go back.” (p.58) Manek her uncle who is experienced expatriate in Boston comes and guides her. In the new land, he tells her “You would not be allowed to wear shorts or bikinis, and if you were a boy, you would be allowed to wear a beard or keep your hair long.” (p.13) He is emphasizing to keep pure their culture and rules. America the place where men and women are in same position, there is equality, freedom of choices, freedom of individual life, and liberty in everything. No one can interfere to the affairs of someone. It is depended upon to the person whether who lives as Muslim, Hindu, Jews, Christian or Parsee. Feroza gains freedom of everything, and she is shaping up a new life for herself; changes and forgets that who was she and what was her culture. Her three months vocation updates to years. She gets admission from Denver University. After that Feroza begins to assimilate the American

culture. Feroza absorbs the cultural shock, changes her lifeways, learns driving, dancing, drinking, does a part-time job in a bar and wears short and tight clothes. While she was a student at Denver University, she falls in love with David Press an American Jewish boy.

When Feroza expresses her decision about the marriage with David to Manek, then he says:

It all seems wonderful now, but marriage is something else, our cultures are very different. Of course, I am not saying it can't work, but you have to give it time. We will keep touching on the phone, and see how it goes? (p. 263)

After consultation with her uncle, she wants to inform her family in Lahore by sending a letter to take permission of marriage; this news has shocked all the family members. She calls to her mother and says:

We are having a civil marriage in any case; a judge will marry us... of course, you know David and I are Unitarians! Zareen replied Unitarians! You sound almost as if you have converted. (p. 278)

This news like bomb-explosion disintegrates all family members, especially Zareen. Because, based on the Zoroastrian culture they will lose social privilege as well as religious, and they will not have called Parsee anymore. According the strict rules of Parsee community, they have to reject her decision. Zareen warns her that Parsee people never forget their pure Zoroastrian culture and it is not allowed to marry a non-Parsee boy. Zareen says, "I should have listened. I should never have let you go so far away. Look what is done to you... you have become an American brat." (p.279)

Immediately, her mother goes to America to forbid her daughter from marrying. Zareen talks of all the possible threats of marrying with the non-Parsee boy. She warns her that she might be thrown out from the society, and nobody likes you. She would not be permitted to enter Parsee temples and may not be allowed to attend religious ceremonies or even the parent's funeral. Clash goes on between them and Feroza tries to change her mother mind and Zareen wants to change hers. Mother is getting more and more restless and anguished with daughter's behavior and she says:

Parsee would deprive her daughter, her heritage, her family, and her community. She would be branded an adulteress and her children pronounced illegitimate. She would be accused of the community the most heinous sacrileges. Cut off from her culture and her surroundings like a fish in shallow waters, her child would eventually shrivel up. (p.289)

Zareen secretly meets David and explains Parsee rituals and culture to him patronizingly. She adds, how their cultures are



difference to each other, there are many barriers. She says that it is impossible to marry Parsee girl. David tells Zareen:

My parents are not happy about the marriage, either. It is lucky they are reformed Jews, otherwise, they would go into mourning and pretend I was dead... I belong to an old tradition too. (p.298)

He also points out to some obstacles in Jewish culture, but he preferred his love to his culture. Finally, Zareen makes him conscious about Parsee and Jewish cultural disparities and convince him to desist from marriage. Pandya points out that David's love for Feroza is getting melt away and also his feeling is losing. He is getting hopeless to go out of her life. On the other side Feroza, the protagonist of the novel disintegrates and fades away because of the conflict between two cultures. She loses all her wishes and feels getting alienated and isolated. Ultimately, because of the cultural antagonism, David desists and decides to leave Feroza.

Singh (1993), states that Feroza has tested the freedom of life and now she is not able to give it up. She takes the decision to manage her personal life and will not permit anyone to interfere in her individual affairs. She will wed with the person whom she loves without disturbing herself whether he is Parsee or non-Parsee. Feroza is a Parsee girl and she will be Parsee. Sidhwa intends to point out the cultural antagonism among the individuals, groups, and society through the character of Feroza.

Hussain (2005) argues that the novel "An American Brat" deals with the issue of the 'Cultural conflict' young generations from the Indian subcontinent have to be content with when they go to study abroad. It also sketches the conflicts the divergent cultures generate between the families 'back home' and their transformed and transgressing progeny bravely groping their way in the first world.

### Conclusion

Feroza's story depicts the three cultures, Parsee (Zoroastrian) culture, Islamic culture, and the western culture of America. The story represents clash of western and eastern cultures. Sidhwa tries to show discriminatory issues of Parsee's laws toward women. Men are allowed to marry with non-Parsee girls in Zoroastrianism, but women can't. If a Parsee girl marries with a non-Parsee, she commits a cultural suicide; therefore they prevent her to entry into Zoroastrian temple and will deny all religious ceremonies. Her life experiences are represented the mental state of a multicultural community, particularly of ethnic and refugees groups. She illustrates all expatriates who find it very difficult to inhabit a new land and to balance between custom or ritual and modernism, past and present, dependence and independence, native and migrants. Critics call this is a conflict between traditionalists and modernists.

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## POST TERM PREGNANCY PREVALENCE

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### ABSTRACT

**Background:** The normal Pregnancy period is 280 days or 40 Weeks; the global Incidence of Post-date Pregnancy is about 5-10% which is mostly seen in Primipara Women. The Term Post-date Pregnancy is used when the duration of Pregnancy Exceeds 40 weeks in other words. the pregnancy is known as post pregnancy if its duration exceeds 42 weeks., The incidence of Post-term pregnancy is about 2-14% but it may be different in various Countries. in Post-Term Pregnancy despite the mortality and morbidity of the fetus and newborn there is a higher risk of Maternal Mortality and morbidity such as Labor Dystocia, Severe laceration of the perineum and Cesarean section.

**Materials and Methods:** This Research was performed in Nangarhar University Teaching Hospital Gynecology and Obstetrics Ward from 22/05/202 – 22/08/2021. During the research period 2549 patients were admitted to the hospital. Among these patient, we had found 58(2.3%) post term pregnancy and average age of these patients were 31.3 years 2491 The rest patients (97.7 %) had other pregnancies.

**Findings:** Among 58 post terms, 51 (87.9%) of the patients were Multipara and 7 (12.1%) of the patients were Primipara.

The neonatal complication of the post term pregnancy was such as meconium aspiration syndrome 8 (13.8%), Shoulder Dystocia 5 (8.6%), stillbirth 4 (6.9%) and neonatal asphyxia 4 (6.9%). but fortunately there was no complication in majority of the newborns 37 (63.8%).

Maternal Complications of the Post-Term Pregnancy  
Include oligohydramnios 19 (32.8%),

Perineal Laceration 12 (20.7%), Post-Partum Hemorrhage 6 (10.3%), Macrosomia 3 (5.2%).

Fortunately, there were no complication in 18 (31%) Patients.

According to the delivery method 35 (60.4%) patients had Normal Vaginal Delivery, 16 (27.6%) patients delivered their babies through Cesarean section, 5 (8.6%) patients needed Assisted Delivery and 2 (3.4%) patients went through normal vaginal delivery with episiotomy.

It is worth mentioning that the Average Weight of the Newborns was 3.5Kg.

Type of study was descriptive Cross Sectional of method

**Conclusion:** This Research has been performed in Nangarhar University Teaching Hospital Gynecology and Obstetrics Ward from 22/05/2021 – 22/08/2021. During the research period 2549 patients were admitted in hospital among these patient we had found 58(2.3%) post term pregnancy and average age of these patients were 31.3 years and 2491 patients 97.7 % had other pregnancies.

**Keywords:** post term pregnancy, maternal and newborn complication of post term pregnancy

## Introduction

The normal Pregnancy period is 280 days or 40 Weeks; the global Incidence of Post-date Pregnancy is about 5-10% which is mostly seen in Primipara Women. The Term Post-date Pregnancy is used when the duration of Pregnancy Exceeds 40 weeks on the other hand if the duration of pregnancy exceeds 42 weeks then its known as Post-Term Pregnancy, the incidence of Post-term pregnancy is about 2-14% But it may different in various Countries <sup>[1]</sup> in Post-Term Pregnancy despite the mortality and morbidity of the fetus and newborn there is a higher risk of Maternal Mortality and morbidity such as Labor Dystocia, Severe laceration of the perineum and Cesarean section, the primary goal of this research is to identify the cases of Post-Term Pregnancy in all obstetrical Patients. <sup>[2]</sup>

This Descriptive Cross Sectional Research has been performed in those patients that were hospitalized in Obs/Gyn Ward of Nangarhar University Teaching Hospital during 22/05/2021 – 22/08/2021. At the end of the research we have found that 2549 pregnant women were admitted among all those patients 58 (2.3%) of them were Post-Term Pregnancy and 2491 pregnant women had other pregnancy. the average age of these 58 patients were 31.3 years, among 58 patients 51 (87.9%) of them were Multipara and 7 (12.1%) of theme were Primipara. The neonates that were born from a Post-Term Pregnancy had multiple complications such as Meconium Aspiration Syndrome in 8

(13.8%), Shoulder Dystocia in 5 (8.6%), stillbirth in 4 (6.9%) and Asphyxia in 4 (6.9%) but fortunately there was no complication in majority of the newborns 37 (63.8%). Maternal Complications of Post-Term Pregnancy Includes oligohydramnios in 19 (32.8%) patients, Perineal Laceration in 12 (20.7%) patient, Post-Partum Hemorrhage in 6 (10.3%) patients, Macrosomia in 3 (5.2%) and fortunately in 18 (31%) Patients there was no complication. According to the method of the delivery 35 (60.4%) patients had Normal Vaginal Delivery, 16 (27.6%) patients delivered their babies through C/S, 5 (8.6%) patients needed Assisted Delivery and 2 (3.4%) patients went through normal vaginal delivery with episiotomy. It worth mentioning that the Average Weight of the Newborns was 3.5Kg.

#### **Basic Goals of the Research:**

- Identification of Post-Term Pregnancy in Obstetrical Patients

#### **The Sub-Goals of the research:**

- To identify maternal complication
- To explain the type of delivery in post term pregnancy

#### **Need and Importance of the Research:**

- Finding the cases of Post-Term Pregnancy in the community
- Recognizing the Risk Factors of the Post-Term pregnancy in the community
- Lowering maternal and newborn mortality and morbidity of the Post-Term

Pregnancy by some basic management approaches

Which factors act as Risk factors for Post-Term Pregnancy?

The exact cause of Post-Term Pregnancy is unknown but the most common risk factor is to make mistake in counting the Last Menstrual Period by a Pregnant woman<sup>[3]</sup>. Having past history of Post-Term Pregnancy, Advanced age, Prim gravidity, obesity, Genetically Defects are other factors that may lead to Post-Term Pregnancy. Some Fetal anomalies such as Anencephaly and Fetal Adrenal Hypoplasia are predisposing for Post-Term Pregnancy<sup>[2]</sup>. In normal full term fetus, the Estrogen Precursor is secreted by Fetal Adrenal gland which is converted to estrogen by placental Sulphatase enzyme, in case of Fetal Adrenal hypoplasia the estrogen precursor is either low or absent, hence the initiation of the Labor is highly dependent on low Estrogenic Environment which is not obtained because of Fetal Adrenal Hypoplasia, Thus the pregnancy may extend further and result in Post-Term Pregnancy. Placental Factors such as Sulphatase Deficiency may also extend the pregnancy resulting in Post-Term Pregnancy.<sup>[4]</sup>

#### **Physiological Changes of Post-Term Pregnancy:**

##### **1. Placental Changes**

- Arteriosclerosis

- Infarction
- Placental Aging
- Calcification

## 2. Amniotic Fluid Changes

- Quantitative: the amount of amniotic fluid might be decreased and causes oligohydramnios

- Qualitative: such as the discoloration of the amniotic fluid due to Meconium Discharge

## 3. Fetal Changes

- Overweight: in 45% cases
- Normal weight: in 15% cases
- Underweight: in 40% cases

## Maternal Complications of Post-Term Pregnancy

✚ Pregnancy is a physiologic process and it is accompanied with some short term Symptoms thus every mother wants to complete the period of their pregnancy safely, but if the duration of the pregnancy exceeds its normal interval may result in anxiety and depression

✚ The delivery of overweight fetus may traumatize genital tract resulting in Grade I to Grade IV laceration of the perineum

✚ Delivery of overweight fetus is sometimes associated with Shoulder Dystocia

✚ PPH is a threatening complication that occurs after delivery

✚ Higher incidence of operative delivery <sup>[2]</sup>

## Fetal Complications of Post-Term Pregnancy

✚ Oligohydramnios: low levels of amniotic fluid may cause fetal distress

✚ Meconium aspiration syndrome: is a condition in which fetus aspirate meconium in intra-uterine life. During stress the pituitary gland of the fetus secretes Arginine Vasopressin to relax the smooth muscles of the intestines, this results in discharge of the meconium into the amniotic cavity and change the color of the amniotic fluid

✚ Fetal trauma such as bone fractures, Shoulder dislocation and brachial plexus injury

✚ Higher incidence of Perinatal Death <sup>[5]</sup>

## Prevention

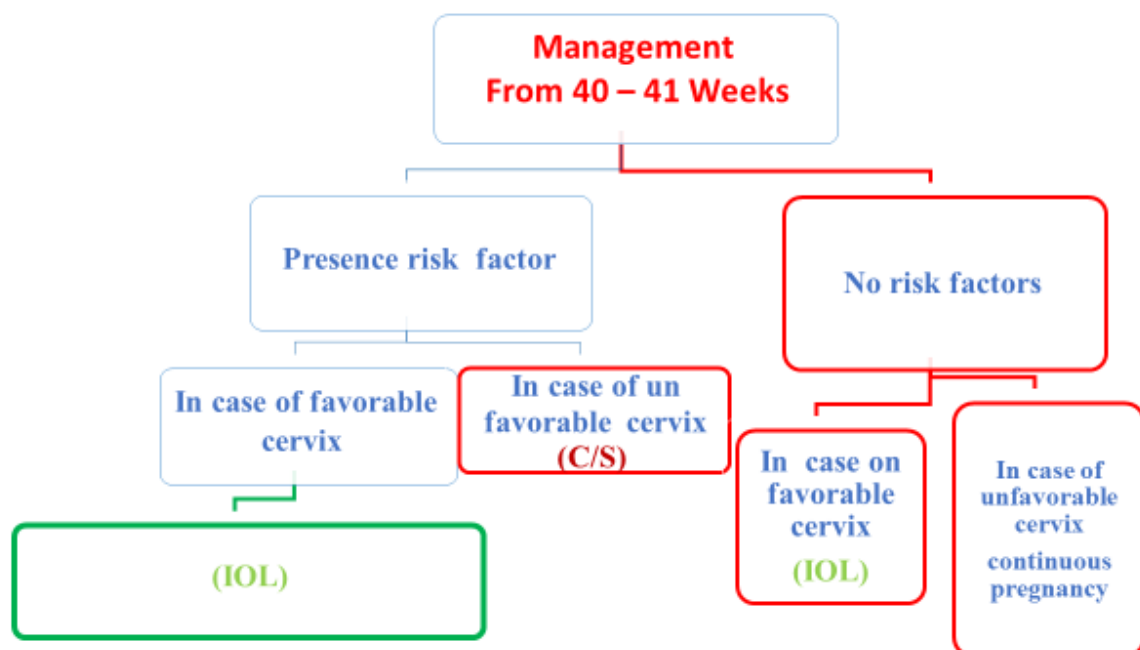
- Induction of labor
- Swiping of the membrane

- Sexual intercourse <sup>[6]</sup>

### Management of Post-Term Pregnancy

treatment of Post-Term Pregnancy is dependent upon the findings of Pervaginal examination, outcome of the Fetal Wellbeing Evaluation and the presence of pregnancy related risk factors in mothers. <sup>[7]</sup>

The treatment plan of a Post-Term Pregnancy with 40-41 weeks of gestation is described in the following diagram:



If there is no complication During 41<sup>st</sup> week of gestation, we should wait and perform following activities for evaluation of the mother and fetus:

1. NST (Non stress test) twice per week
2. Fetal kick count per day
3. BPP twice per week

After 42<sup>nd</sup> week of gestation we shouldn't wait and terminate the pregnancy

### Intra-Partum Management of Post-Term Pregnancy

- Left lateral position
- CTG continuously
- ARM (Artificial rupture of membrane)
- Amnioinfusion 750-1000mg of Normal Saline or Ringer Lactate in case of meconium stain Liquor <sup>[7]</sup>

### Methodology

This is a Hospital based Descriptive Study that was performed in Nangarhar university teaching hospital during 22/05/2021 – 22/08/2021. For the sampling of the patients we

consecutively completed the history files of the patients who were hospitalized in Obs/Gyn ward for delivery, in the history files we have written all the important information about the patients, after then we performed obstetrical physical examination, measured the vital signs of the patients and performed an U/S examination to determine the gestational age of the hospitalized patients. If the gestational age of the patient was 40 weeks and the U/S was normal we have counselled with these patients to wait for delivery and discharged from hospital after their consent. The patients with gestational age of  $\geq 42$  weeks have been taken under the management for their delivery, these patients were further subdivided into two categories according to their cervical predisposition in 1<sup>st</sup> category the patients easily initiated their Labor process by medical treatment in 2<sup>nd</sup> category, patient's uterine cervix was not completely able for delivery then these patients were prepared for Caesarean section. the maternal or neonatal complications were written in questionnaire and the patients were under observation for PPH for 24 hours after the delivery

#### **Research Materials:**

1. Patients
2. Complete history of the patients (file)
3. Ultrasound device
4. Laboratory exams
5. Research form
6. Consent letter

#### **Inclusion criteria**

▪ All pregnant women that were hospitalized for delivery, were included in this research

#### **Exclusion criteria**

- Pregnant women with breech presentation
- Women with multiple pregnancy
- Pregnant women that were performing precipitative delivery
- Pregnant women with past history of C/S
- Pregnant women that have DM

#### **Conclusion**

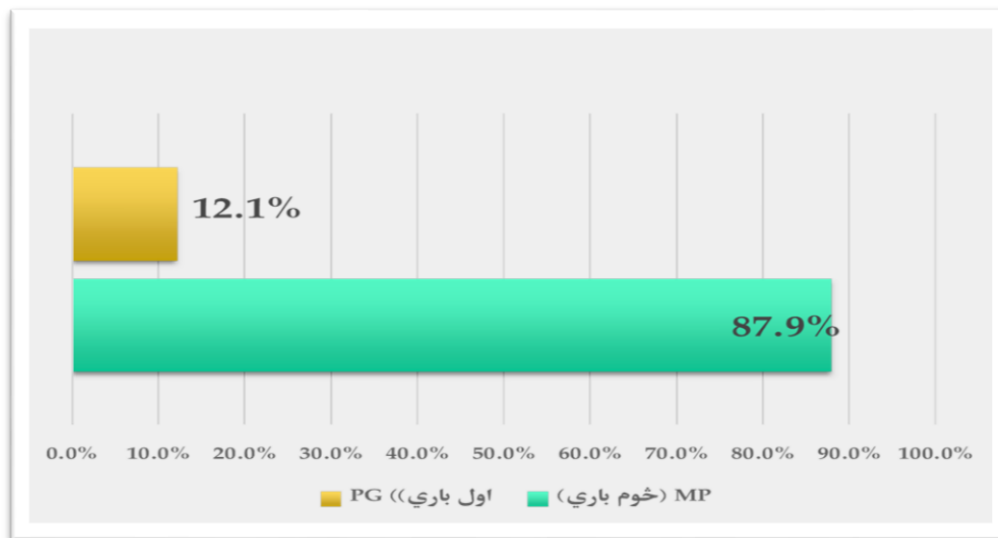
This Research was conducted on those patients that were hospitalized in Obs/Gyn Ward of Nangarhar University Teaching Hospital. at the end of the research, we have found that among 2549 pregnant women 58 (2.3%) of the patients had Post-Term Pregnancy in which most of



them were multipara, and the remaining 2491 patients were having normal pregnancy.

At the end of the research, we found that among 2549 pregnant women 58(2.3%) were having Post-term pregnancy and 2491 were having normal pregnancy: among these 2.3% Post-term pregnant women, 12.1% were Primipara and 87.9% were multipara.

Incidence of Post-term pregnancy according to numbers of Deliveries is shown below:



according to the age of these 58 Post-term pregnant women the age of 37 of them was between 20-30 years and the age of 21 was between 31-45 years.

The results of fetal complications of Post-term pregnancy in our research are as following: meconium aspiration 8(13.8%), Shoulder Dystocia 5(8.6%), Dead fetus and Asphyxia 4 (6.9%) and 37(63.8%) women delivered their babies without complications.

The results of maternal complications of Post-term pregnancy in our research are as following:

Oligohydramnios 19(32.8%), perineal laceration 12(20.7%), Postpartum hemorrhage 6(10.3%), macrosomia 3(5.2%) and 18(31%) of these women didn't have any complication.

The results of delivery method among these 58 Post-term pregnant women in our research are as following: C/s 16(27.6%), assisted delivery 5(8.6%), Normal vaginal delivery 35(60.4%) and normal delivery with episiotomy 2(3.4%)

## Discussion

A research that was performed during 2015-2016 in 170 Patients of a tertiary care hospital in INDIA with average age & SD of  $24.12 \pm 13$ , Data revealed that in 2 (1.14%) women the duration of pregnancy was  $\geq 42$  weeks which was detected by U/S Examinations. According to the type of delivery 68.8% delivered their babies through normal vaginal delivery, 3% of the women delivered their baby through instrumental delivery and 28.2% women delivered their babies through C/S.<sup>[8]</sup> this research has approximately similar results as our research, in this country the frequency of assisted delivery is 3% which is lower than our country's assisted delivery frequency the probable reason is lack of mindset clarity towards C/s in our society that's why our Obs/Gyn specialist choose assisted delivery as an alternative procedure for C/s.

Another research that was performed during 2012-2016 in 8302406 patients of 438 Health Clinics in CHINA, Data revealed that Post term pregnancy was detected in 72393 (1.16%) women with maternal age of 20-49 years, among these post term pregnant women 12037 (60.3%) women were multipara<sup>[9]</sup>. this research has approximately same results as our research, Maternal complications is higher in our country. The probable reason is that our society women do not consent for C/s easily, thus normal vaginal delivery in a Post-term pregnancy may results in different complications

Another research that was performed during 5 years in 23524 pregnant women of Tertiary university-affiliated medical center in ISRAEL, data revealed that the incidence of post term pregnancy was 3.2%. among these pregnant women, 81.3% delivered their babies through spontaneous vaginal delivery, 9.6% women delivered their baby through instrumental delivery, 8.9% women delivered their babies through C/S, 20% of the newborns were dead and obstetrical trauma was present in 3.6% cases.<sup>[10]</sup> The frequency of operative delivery in our country (27.6%) is higher than the Israel (8.9%). The reason behind Low C/s numbers in Israel is regular ante-natal cares or performing CTG in high risk pregnant women. That's why operative delivery is the safest procedure for them. Other countries have the facilities for standard ante-natal cares They can assess vaginal delivery and perform C/s in case of harm and danger.

## Suggestions

- In order to detect the exact gestational age, we kindly request all OBS/GYN doctors to Examine all pregnant women accurately.

- In order to avoid feto-maternal complications the OBS/GYN doctors must help all the pregnant women that are having Post Term Pregnancy.
- In order to detect and prevent expected complications of Post Term Pregnancy the delivery of the post term pregnant women must be performed by an OBS/GYN specialist.
- In order to detect the exact gestational age by a pregnant woman, public awareness is required to all pregnant women.
- Health Education is necessary for all pregnant women to diagnose & Treat pregnancy related complication, the OBS/GYN doctors should recommend pregnant women to visit near health center for Antenatal care

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## RIBOFLAVIN CHEMICAL STRUCTURE AND ITS SOURCES

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### ABSTRACT

Riboflavin also called Vitamin B2, is one of the 8 B vitamins. All B vitamins help the body convert food (carbohydrates) into fuel (glucose), which is used for energy production. These B vitamins, often referred to as B vitamins, also help the body absorb fats and proteins. Riboflavin is essential for maintenance of the skin, the mucous membranes, the cornea of the eye, and nervous system structures such as the myelin sheaths that surround the nerves. In experimental animals, development of the fetus and resistance to infections are impaired by deficiency of this vitamin. Riboflavin is part key of two important coenzymes called flavin mono nucleotide or (FMN) and flavin adenine dinucleotide (FAD). These coenzymes are involved in complex oxidation-reduction conversions in the liver, electron transport mechanisms that release energy within cells, and other important cellular respiratory functions.

**Keywords:** VitaminB2, Riboflavin, FMN, FAD, Coenzyme, water soluble

### 1. Discovery of Riboflavin

### 2. Introduction and History of Riboflavin or VitaminB2

The first description of what was later identified as a case of riboflavin deficiency was by Stannus in 1912 in the British Journal of Tropical Medicine. In 1938, Americans Sebren and Butler published the first definitive report on riboflavin deficiency in humans, which became known as ariboflavinosis. these and subsequent reports picture victims as suffering from inflammations of the eyes, lips, mouth and tongue, as well as scaly, greasy skin eruptions (seborrheic



dermatitis). Much further understanding of riboflavin's role in human nutrition was contributed in 1949 by a research group led by M. K. Horwitt. [1] Preparing pure riboflavin seemed at first to be an impossible job.

Water extracts of vegetable or grain sources turned out to be mixtures of three water soluble B vitamins, thiamin, riboflavin and small amounts of niacin. The fact that some symptoms of riboflavin deficiency are similar to those of pellagra created additional confusion. Finally, the research team of Kuhn, Gyorgy and Wagner Jauregg in 1933 isolated pure riboflavin from milk and proved it was different from thiamin and niacin. The molecule consists of a d-Ribitol unit attached to an isoalloxazine ring (Figure 3-1). Anything more than a minor change in the molecule results in a loss of vitamin activity. Aqueous solutions of riboflavin are yellow with a yellowish green fluorescence. The vitamin is a constituent of two coenzymes or The two biologically active forms are flavin mononucleotide (FMN) and flavin adenine dinucleotide (FAD) [2], In the pioneering studies by McCollum and Kennedy (3) in the early part of the twentieth century, water-soluble tissue extracts were found to be effective in the prevention of the deficiency state of pellagra in experimental animals. As studies progressed, it became evident that there were at least two distinct fractions of these extracts, one of which was heat-labile and the other heat-stable. Further studies of this heat-stable fraction showed that it was a complex containing a yellow growth factor. This factor had fluorescent properties and was later purified and named riboflavin (B2) (4). Other components of this fraction were later identified as niacin, which was the true antipellagra compound, and vitamin B6, which was particularly effective in preventing dermatitis in animals. The physiological role of the yellow growth factor remained obscure until the land-mark discovery by Warburg and Christian (5) in 1932 of "yellow enzyme" or "old yellow enzyme." This protein was found to be composed of an apoenzyme and a yellow co-factor serving as a coenzyme. This coenzyme was shown subsequently to contain an isoalloxazine ring (6) and a phosphate group (7). Synthesis of riboflavin was accomplished by Kuhn et al. (8) and Karrer et al. (9). The flavin coenzyme riboflavin-5'-phosphate (flavin mononucleotide, FMN), was identified in 1937 by Theorell (10). In 1938, Warburg and Christian (11) clarified the structure of flavin adenine dinucleotide (FAD), formed from FMN. While many enzymes utilize FMN and FAD as cofactors, flavins bound covalently to specific tissue flavoproteins also have been found to have major biological significance, as reviewed by McCormick (12). determination of riboflavin's exact chemical structure



and its synthesis in pure form were achieved in 1935 by two independent groups, a German group led by Richard Kuhn and a Swiss group headed by Paul Karrer. Dr. Karrer received a Nobel Prize in 1937, and Dr. Kuhn was awarded one the following year. However, because Kuhn was Jewish and had just been placed in a Nazi concentration camp, Hitler refused to let him accept. Surviving the war and the Nazis, Dr. Kuhn finally was formally honored by the Nobel Prize Committee [13].

### 3. chemical structure and biological role

Riboflavin structure Formula figure 3-1, is the prosthetic group of flavine enzymes, which are of great importance in general metabolism and particularly in metabolism of protein.

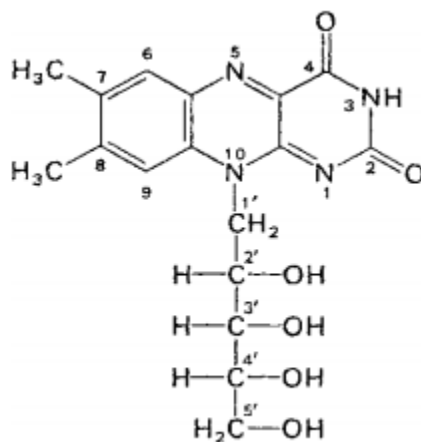


Figure 3-1. Chemical structure of Vitamin B2 or riboflavin

Riboflavin, formerly known as vitamin B2, is the generic term for the group of compounds that exhibit the biological activity of riboflavin Figure 3-2, The parent compound of the riboflavin family is 7,8 dimethyl- 10(1-D-ribityl) isoalloxazine compound, and all derivatives of riboflavin are given the generic name flavins. Phosphorylation of the 5'-position of the ribityl side chain yields flavin mononucleotide (FMN), whereas flavin adenine dinucleotide (FAD) has an additional 5'- adenosyl monophosphate moiety Figure 3-2. FMN and FAD function as coenzymes in a large number of flavin-dependent enzymes that catalyze various oxidation-reduction processes. Both forms are readily convertible to riboflavin by action of phosphatases that are present in foods and those of the digestive system. A relatively minor (< 10%)

of the FAD in biological materials exists in a covalently bound enzyme form in which position 8a is covalently linked to an amino acid residue of the enzyme protein.

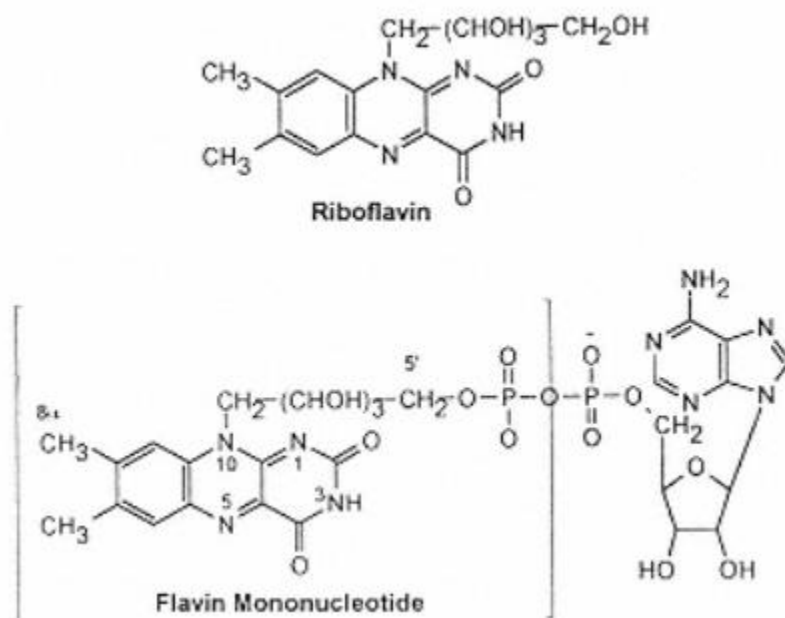


Figure 3-2 structures of riboflavin, flavin mononucleotide, & flavin adenine dinucleotide.

#### 4. Stability

Riboflavin is relatively stable in normal food handling prepare .losses range from 10–15% .Exposure to light, particularly in the visible spectrum from 420–560 nm. Photolytically cleaves ribitol from the vitamin, exchanging it to lumilactoflavin. Lumiflavin is toxic product of riboflavin.[14].

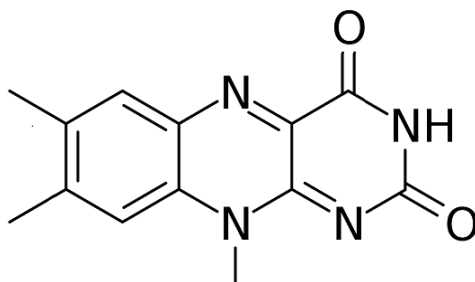


Figure 4-3. Chemical structure of Lumiflavin[14]

Also Riboflavin exhibits its greatest stability in acidic medium, is somewhat less stable at neutral pH, and rapidly degrades in alkaline



environments. Retention of riboflavin in most foods is moderate. [15].

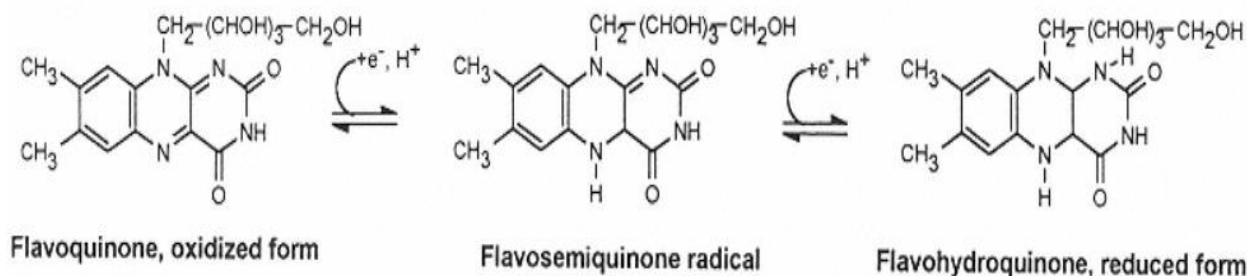


Figure 4-4. Oxidation - reduction behavior of flavins.

To very good during conventional thermal processing, handling, and preparation. Losses during storage of riboflavin in various dehydrated food systems breakfast cereals and model systems are usually negligible. Rates of degradation increase measurably at  $a_w$  above the monolayer value when temperatures are above ambient. [16].

### 5. How Much Ibooflavin Do People Need? (Requirement)

The human requirement for riboflavin varies with metabolic activity and body weight and ranges from 1 to 3 mg per day. Normal adult requirement is 1.1 mg to 1.6 mg per day. In most cases, the riboflavin of foods is present in the form of the dinucleotide, the phosphoric acid ester, or is bound to protein. Only in milk does riboflavin occur mostly in the free form. [2].

Also Recommended Dietary Allowance is 1.3 mg for young women and 1.7 mg for young men. When 2 to 3 times this amount is ingested, the excess is rapidly excreted in the urine, giving it a bright yellow color. In the United States, riboflavin deficiency requiring therapy occurs mainly in severe malnutrition such as is found in alcoholics. [13].

### 6. Food Sources of Riboflavin

The richest sources of vitamin B2 (riboflavin) are milk and other dairy products the organ meats kidney and liver of cows, pigs and chickens and also yeast. As with thiamin, moderate amounts of vitamin B2 are found in most fruits, vegetables, grains, lean meats and poultry. According to Professor George Briggs, milk supplies nearly 40 percent of the vitamin B2 in

the American diet. Important amounts are also supplied by enriched bread and cereals. [13].

Table 6-1. Riboflavin Content of Some Foods [2].

Number	Product	VitaminB2 Mg/100Edible portion
1	Beef	0.16
2	Cabbage	0.05
3	Eggs	0.30
4	Chicken	0.19
5	Beef Liver	3.26
6	Chicken Liver	2.49
7	Beef Kidney	2.55
8	Peas	0.29
9	Spinach	0.20
10	Tomato	0.04
11	Yeast (Dry)	5.41
12	Milk	0.17
13	Nonfat dry milk	1.78

The light sensitivity of riboflavin results in losses of up to 50 percent when milk is exposed to sunlight for two hours. The nature of the packaging material significantly affects the extent of riboflavin destruction. It appears that the wavelengths of light responsible for the riboflavin destruction are in the visible spectrum below 500 to 520 nm. Ultra-violet light has been reported to have no destructive effect on riboflavin (17). Riboflavin is stable in dry milk for storage periods of up to 16 months. Pasteurization of milk causes only minor losses of riboflavin. [18].

## 7. Toxicity Humans body

Vitamin B2 or Riboflavin has always been considered safe for humans or animals at any oral dosage and no cases of toxicity have been reported. According to Horwitt[19], 1,000 mg orally per pound of body weight has produced no ill effects in animals.

T. K.Basu[20], reported on animal studies in which high dosages of riboflavin could retard some malignant tumors but increased the growth of others.



## 8. Functions

The major function of riboflavin, as noted above, is to serve as the precursor of the flavin coenzymes, FMN and FAD and of covalently bound flavins. These coenzymes are widely distributed in intermediary metabolism and catalyze numerous oxidation–reduction reactions. Because FAD is part of the respiratory chain, riboflavin is central to energy production. Other major functions of riboflavin include drug and steroid metabolism, in conjunction with the cytochrome P450 enzymes, and lipid metabolism. The redox functions of flavin coenzymes include both one-electron transfers and two-electron transfers from substrate to the flavin coenzyme [15]. Flavoproteins catalyze dehydrogenation reactions as well as hydroxylations, oxidative decarboxylations, dioxygenations, and reductions of oxygen to hydrogen peroxide. Thus, many different kinds of oxidative and reductive reactions are catalyzed by flavoproteins. [15].

## 9. Deficiency of Riboflavin

No pathologically severe symptoms attributed to vitamin B2 deficiency have been observed in humans. Deficiency symptoms have been induced experimentally in volunteers whose diets were lacking only in the vitamin or who were fed vitamin B2 antagonists. Symptoms usually include lesions of the lips (cheilo-sis) and angles of the mouth (angular stomatitis), a fissured and magenta coloured tongue (glossitis), seborrhoeic follicular keratosis of the nose and fore head, and dermatitis of the anogenital region. Ophthalmic symptoms are a superficial vascularization of the cornea accompanied by intense photophobia [21].

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## THE ROLE OF PUBLIC RELATION IN THE DEVELOPMENT OF ORGANIZATIONS

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### ABSTRACT

Public relations, as a strategic process in the organizational communication system, plays a key role in creating and maintaining effective communication between the organization and its internal and external stakeholders. This field deals with interactions with various audiences such as employees, customers, media, society, and other relevant communities. The aim of this research is to examine the relationship between public relations and organizational strategies, as well as the significant impact that public relations can have on the development and success of organizations. Due to the importance of this topic, this article has addressed some important topics and concepts in this field through library research and the study of articles and books in order to investigate the impact of public relations on the development of organizations. The research results show that public relations is considered an important factor in achieving organizational strategies. This factor can have an influential role in determining marketing and sales strategies, identifying external opportunities and threats, establishing strong relationships with customers and relevant communities, improving organizational processes and performance, and enhancing the image and brand recognition of the organization. For successful implementation of public relations strategies, organizations need appropriate financial and human resources, expertise and capabilities in their workforce, organizational culture change, and

facilitation of the change process and internal collaboration. Additionally, external factors such as market changes, competitors, technology, and regulations may require adjustments to public relations strategies.

**Keywords:** Public relation, Organization development, improving organizational strategies.

## 1 Introduction and Problem statement

Public relations, as a strategic process in organizational management, plays a significant role in the development and progress of organizations. In an era of intense competition in global markets, effective communication and increased public awareness about organizations are critical. In this regard, the role of public relations in organizing and enhancing communication with internal and external stakeholders is very important. Ferguson (1984) initially highlighted the need for research and performance in public relations to focus on the relationship between an organization and its publics, a perspective that has been accepted and advanced by many researchers over the years (Ferguson, M. A, 1984). Research shows that public relations can have a significant impact on ensuring the success of organizations. Studies conducted by Grunig, Cutlip, and their colleagues demonstrate that increasing community awareness about organizations, establishing effective relationships with customers, and gaining public support have a considerable influence on organizational development (Grunig, 2002; Cutlip et al., 2006). Additionally, Ali Mohammadi found that due to the complexity of internal and external organizational environments, there have been significant changes in the business environment. Therefore, organizations need to adopt a new approach in formulating their strategies to ensure their continuity and progress because satisfying internal and external stakeholders is essential for organizational development. In this regard, public relations plays an extraordinary role and should plan to identify the needs of internal and external groups more accurately and satisfy them (Mohammadi, 2021). Similarly, Mahajer Urmieh concluded in his research that effective public relations lead to achieving goals and improving the level of service provided by organizations and raising awareness among audiences (Mahajer Urmieh, 2018). Given the potential importance of public relations in the development of organizations, there are effective strategies that organizations can utilize to achieve their goals. One important strategy in public relations is communication with customers. Organizations can enhance their relationships with customers by providing quality services and products and gaining their trust. Furthermore, providing effective communication channels such as telephone lines, email, and

social networks helps organizations receive feedback and address customer concerns (Broom, G.M., & Sha, B.L., 2013). In addition to customer communication, communication with the community and media is also crucial. By establishing effective relationships with the media and journalists, organizations can accurately disseminate their news and information and attract public opinions. Continuous interaction with the media can also help organizations gain public support and increase public awareness. Public events and activities are also effective strategies in public relations. Organizing exhibitions, conferences, speeches, and festival ceremonies enables organizations to interact with the community and provide opportunities for sharing ideas and enhancing public awareness.

Given the importance of public relations in the development of organizations, there are challenges and fundamental issues in establishing and maintaining effective public relations and utilizing them optimally. The main issue is how organizations can establish strong public relations and simultaneously use appropriate tools and strategies to enhance their development. Therefore, discussing and examining the key factors that affect public relations in organizations and how to manage and utilize them will be essential in facilitating the growth and progress of organizations.

## **2 Importance of Research:**

Research in the field of public relations and its impact on the development of organizations is of great importance. This systematic and logical process is used to search, collect, analyze, and interpret information in order to understand and clarify issues and phenomena. Research in this field can help organizations in the following areas: Firstly, by researching and identifying the needs, preferences, and communication patterns of customers, organizations will be able to design and implement better strategies for their public relations. Secondly, research in the field of public relations can help organizations identify competitors, target markets, and competitors' communication patterns, which can improve competitive strategies and develop marketing and public relations plans. Thirdly, research in the field of public relations can lead to increased public awareness of the importance of public relations and its impact on organizations. Fourthly, research can help organizations gain a better understanding of themselves, their organizational identity, and values, and play an important role in establishing effective internal communications and improving internal interactions within the organization. Overall, research in the field of public relations enables organizations to improve planning and decision-making, enhance brand image, attract public support, and develop internal interactions.



### 3 Explanation of some important concepts

#### 3.1 Public Relations:

Public relations include activities and strategies that organizations use to establish and maintain relationships with different populations. These activities include managing external communications (with the media, customers, and society) and managing internal communications (with employees and members of the organization). The main goal of public relations is to create and maintain positive attitudes and satisfaction in the community. Various definitions have been proposed for public relations, including the definition proposed by Rex Harlow, who has extensive writings in the field of public relations. He suggests that "public relations is the knowledge through which organizations consciously strive to act on their social responsibility in order to gain understanding and support from those who are important to the institution" (Ahmad et al., 2012). All definitions emphasize that without a doubt, public relations is key in organizations' communication with employees, customers, media, and other organizations. The public relations manager is also a manager of organizational communication because public relations is a bridge capable of reducing organizational concerns, and the public relations manager is a spokesperson for the audience to convey their message to the organization, as well as a spokesperson for the organization to convey the organization's message to the audience. The public relations manager should have more information than other individuals in the organization because they make decisions about the organization's credibility (good or bad) more than anyone else. Public relations managers should define the role of public relations in the organization first, in the sense that public relations must prove itself to the organization first. Because if public relations cannot introduce itself to the organization, it cannot introduce the organization to customers and society.

#### 3.2 Organizational Strategies

Organizational strategies play a very important role in determining the goals and strategies of an organization, predicting the needs and preferences of customers, and the growth and development of the organization and solving problems that arise on the path towards achieving goals and fulfilling commitments. Organizational strategies, in addition to determining the main and primary goals of the organization, help formulate the necessary strategies to achieve these goals.

Organizational strategies also take into account the needs and preferences of customers and, by analyzing the market and customers, try to propose suitable solutions to attract and retain customers. These strategies can include pricing, improving the quality of products



and services, developing relationships with customers, and using various marketing methods. In addition, organizational strategies help the organization to grow and develop. Suitable strategies for expanding activities, entering new markets, developing new products and services, and improving overall performance are determined by analyzing the internal and external situation. Furthermore, organizational strategies help the organization in solving problems that arise on the path towards achieving goals.

### **3.3 The effect of public relation on organizational**

In fact, the impact of public relations on organizational strategies refers to the study and analysis of communications and activities in public relations within an organization and their role in achieving organizational strategies. Public relations involves coordination and communication with internal and external stakeholders of the organization, as well as public events and activities. The impact of public relations on organizational strategies can be examined from various perspectives. For example, public relations can have an influential role in determining marketing and sales strategies. By establishing strong connections with customers and relevant communities, an organization can gain customer trust and strengthen its desired brand. Additionally, public relations can help identify external opportunities and threats and assist the organization in strategic decision-making. By understanding the needs and preferences of customers, the competitive market, and the business environment, the organization can propose suitable strategies and make necessary improvements in its structure and activities. Therefore, it can be said that public relations can have a direct impact on organizational strategies.

### **3.4 Public relations play a crucial role in organizational communication.**

It involves managing and maintaining the relationship between an organization and its various publics, including customers, employees, investors, media, government agencies, and the general public(Christensen & Cornelissen, 2011). Here are some key reasons why public relations is important in organizational communication:

**Reputation management:** Public relations helps organizations build and maintain a positive reputation. By effectively communicating with stakeholders, addressing concerns, and highlighting achievements, PR professionals can shape public perception and enhance the organization's image(Prapavessis & Carron, 1996).  
**Crisis management:** In times of crisis or negative events, public relations is essential for managing the situation and minimizing damage to the organization's reputation. PR professionals develop strategies to

address issues, provide accurate information, and communicate effectively to regain trust and credibility.

**Building relationships:** Public relations focuses on building and nurturing relationships with various stakeholders. By engaging in two-way communication, organizations can understand the needs and expectations of their audiences, establish trust, and foster long-term relationships (Bailey et al., 2009).

**Media relations:** PR professionals work closely with the media to generate positive coverage and manage media inquiries. They craft press releases, organize press conferences, and build relationships with journalists to ensure accurate and favorable media representation (Edwards, 2006).

**Employee communication:** Effective internal communication is vital for employee engagement, morale, and productivity. Public relations facilitate transparent and timely communication within the organization, keeping employees informed about company news, policies, and initiatives (Sudiran, 2015). **Influencing public opinion:** Public relations aims to shape public opinion and attitudes towards an organization. Through strategic messaging, storytelling, and targeted campaigns, PR professionals can influence public perception, generate support, and promote understanding of the organization's values and goals. **Stakeholder engagement:** Public relations involves engaging with various stakeholders, such as customers, investors, community members, and advocacy groups. By understanding their interests and concerns, organizations can tailor their communication efforts to meet their needs and build mutually beneficial relationships. **Branding and marketing support:** Public relations complements branding and marketing efforts by creating a positive environment for the organization's messages. PR activities, such as media coverage, events, and endorsements, can enhance brand visibility, credibility, and recognition (Botan & Taylor, 2004).

## Conclusion

In today's world, understanding, mutual recognition, and communication are accepted as fundamental principles of management to achieve goals. Public relations, which is seen as a strong element in evaluating and strengthening programs and advancing organizational goals, is considered one of the important factors in the fate of any organization and group. Today, the role of public relations in its various positions and different conditions is not hidden from anyone. All members of society in various cultural, political, economic, etc. sectors are looking for public relations that help them design methods and determine policies related to the future. Public relations plays various roles

in different positions and conditions, but two roles can be distinguished more than others in internal and external communications. The art of public relations is to be able to identify external resources and conditions and link them to internal resources and facilitate the implementation of internal orders and ultimately establish proper communication within the organization. In this regard, the first step is to understand the environment and the organization, and the purpose of this understanding is to identify and investigate its internal and external strengths and weaknesses. Therefore, public relations is considered a very important and influential factor in achieving organizational strategies. This factor can play a significant role in determining marketing and sales strategies, identifying external opportunities and threats, establishing strong connections with customers and relevant communities, improving processes and organizational performance, and enhancing the image and brand recognition of the organization. To succeed in implementing public relations strategies, organizations need appropriate financial and human resources. Adequate financial resources are needed to cover the costs of implementing public relations strategies and necessary advertising. In addition, human resources with expertise and necessary skills in various fields such as public relations, marketing, media and communications, brand management, etc., should be present in the organization. In addition to financial and human resources, organizational culture change is also necessary for the success of public relations strategies. Organizational culture change means creating a work environment where there are open and transparent communications, collaboration and interaction between members of the organization, and mutual trust among them. For this purpose, the organizational culture of the organization must change towards paying attention to strong communications and public relations. In addition to cultural change, internal collaboration is also necessary for the success of public relations strategies. Collaboration between members of the organization and different teams is very important for implementing public relations strategies. This collaboration can include exchanging information, experiences, and resources and facilitating process improvement and organizational performance. External factors may also require adjustments to public relations strategies.

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## VITAMIN B1 (THIAMIN) AND ITS CHARACTERISTICS

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### ABSTRACT

Vitamins are chemical compounds that play essential roles in crucial metabolic pathways in all living organisms. Thiamine, also known as vitamin B, was the first B vitamin to be discovered. It acts as a cofactor for numerous enzymes involved in energy metabolism. These thiamine-dependent enzymes are vital for the synthesis of neurotransmitters, the production of substances that protect against oxidative stress, and the creation of pentoses, which are essential precursors for nucleic acids. Thiamine holds a significant position in cerebral metabolism. Insufficient levels of thiamine result in dry and wet beriberi, which manifest as peripheral neuropathy and cardiomyopathy accompanied by edema and lactic acidosis. Additionally, it can lead to Wernicke Korsakoff syndrome.

**Keywords:** Vitamin B1, thiamine, Thiamin pyrophosphate, dry beriberi, wet beriberi, Wernicke-Korsakoff syndrome

### 1. Introduction

#### Vitamin B1 and its characteristics

#### The history of Vitamin B1

At one time, the disease beriberi was believed to be caused by a microorganism or toxin. The first indication of a nutritional an etiology was the virtual elimination of beriberi in the Japanese



Navy in 1885, brought about by increasing the proportion of meat and vegetables in the staple rice diet. In 1890, Eijkman, a Dutch medical officer stationed in Java, discovered that feeding chickens on polished rice induced a polyneuritis closely resembling human beriberi, which could be prevented by the addition of rice bran to the avian diet. A few years later, Grijns extracted a water-soluble ‘polyneuritis preventive factor’ from rice bran and correctly concluded that beriberi is the result of a dietary lack of an essential nutrient. By 1926, two Dutch chemists, Jansen and Donath, succeeded in isolating the factor (now called vita-min B1) in crystalline form from rice bran extracts. By 1936, Robert R. Williams had elucidated the structure of vitamin B1, which he named ‘thiamine’, and accomplished its synthesis. The failure of thiamin-deficient pigeons to metabolize pyruvate led Sir Rudolph Peters and his colleagues in the early 1930s to establish the essential role of thiamin in pyruvate metabolism. Lohmann and Schuster then discovered that the active coenzyme form of the vitamin was the di phosphate ester. (In this text, ‘thiamin’, rather than ‘thiamine’, is used in accordance with the nomenclature policy of the International Union of Nutritional Sciences Committee on Nomenclature.) [1]

## 2 Structure of Vitamin B1 or Thiamine activity

The thiamin molecule comprises substituted pyrimidine and Thiazole moieties linked by a methylene bridge Fig. (1.2). It is a quaternary amine, which exists as a monovalent or divalent cation depending on the pH of the solution. Three phosphorylated forms of thiamin occur in nature. In living tissues the pre-dominant form is the di phosphate, usually referred to as thiamin pyrophosphate (TPP) Fig. (1.2), which serves as a coenzyme in several metabolic pathways. Small amounts of the monophosphate and triphosphate esters also occur in animal tissues. Thiamin triphosphate has no coenzyme function, but it has a role (not yet completely understood) in nerve trans-mission. Thiamin monophosphate appears to be biologically inactive. The name thiamin and the individual phosphates of thiamin will be used as specific terms; total thiamin means the sum of thiamin and its phosphates, and vitamin B1 is a non-specific generic term.[1]

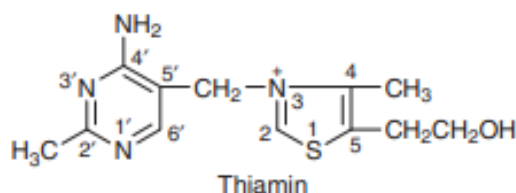


Fig.1 Chemical Structures of thiamin

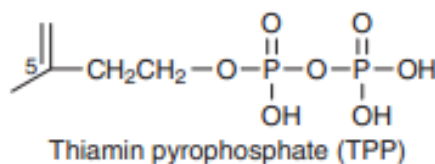


Fig.2 Chemical Structures of thiamin pyro phosphate

### 3 Dietary Sources

All plant and animal tissues contain vitamin B1 and so the vitamin is existing in all natural unprocessed foods. Rich sources of vitamin B1 include yeast and yeast extract, wheat bran, oatmeal, whole-grain cereals, pulses, nuts, lean pork, heart, kidney and liver. Beef, lamb, chicken, eggs, vegetables and fruits contain intermediate amounts, while milk contains a relatively low amount. The milling of cereals removes most of the vitamin B1, so white flour, breakfast cereals and, in certain countries, polished rice are enriched by addition of the vitamin.

In most animal tissues, over 90% of the thiamin is phosphorylated, with TPP predominating. Exceptions are pig skeletal muscle [2] and chicken skeletal white muscle [3], in which the triphosphate constitutes 70–80% of the total thiamin existent. The natural vitamin B1 content of most cereals and cereal products, including white flour made from wheat, is present almost entirely in the form of non-phosphorylated thiamin.

signs of acute vitamin B1 deficiency that was not attributable to mal absorption. When biopsy samples from this patient were studied, the saturable component of thiamin uptake was found to be higher than in samples from non-deficient patients. The higher rate of uptake was reflected by an increased  $V_{max}$ , signifying up-regulation of thiamin carriers. The results from this one patient suggest that vitamin B1 deficiency in humans may enhance the capacity of thiamin absorption, an adaptive mechanism which has been reported in rats [4].

#### 3.1 Absorption of bacterially synthesized thiamin in the large intestine

Instillation of thiamin directly into the colonic lumen of human subjects did not result in increased plasma concentrations of thiamin in blood samples taken 1, 2 and 4 hours after administration [5]. Based on this observation, it appears that bacterially synthesized thiamin is not absorbed in the large intestine. Kasper [6] pointed out that the intestinal flora destroys or utilizes a large part of the thiamin injected into the large intestine, and so the true capacity of the colon to absorb B vitamins can be determined only after eliminating the intestinal flora.

#### 3.2 Post-absorptive metabolism

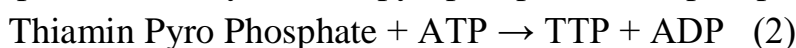
Following absorption, vitamin B1 is carried by the portal blood to the liver. Both non-phosphorylated thiamin and thiamin monophosphate circulate in the bloodstream, the former bound to plasma proteins. In normal adults, 20–30% of total thiamin in the plasma is protein-bound [7].

Transport of thiamin at the membrane level in rat liver has been studied using capacity thiamin/H<sup>+</sup> antiport mechanism was shown to be present with a narrow substrate specificity that was distinct from N1-methylnicotinamide/H<sup>+</sup> exchange.

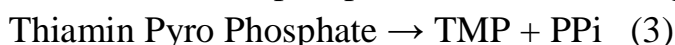
Within the liver and in other tissues, thiamin is converted to its coenzyme form, TPP, by the catalytic action of thiamin pyro phospho kinase:



In the brain and other nervous tissue, some of the TPP is converted to thiamin triphosphate (TTP) by thiamin pyrophosphate ATP phosphoryl transferase:



Nervous tissue also contains thiamin pyrophosphatase converts small amounts of TPP to thiamin monophosphate (TMP) and inorganic phosphate:



Also in nervous tissue, TTP may be hydrolysed by thiamin triphosphatase to yield TPP and inorganic phosphate.

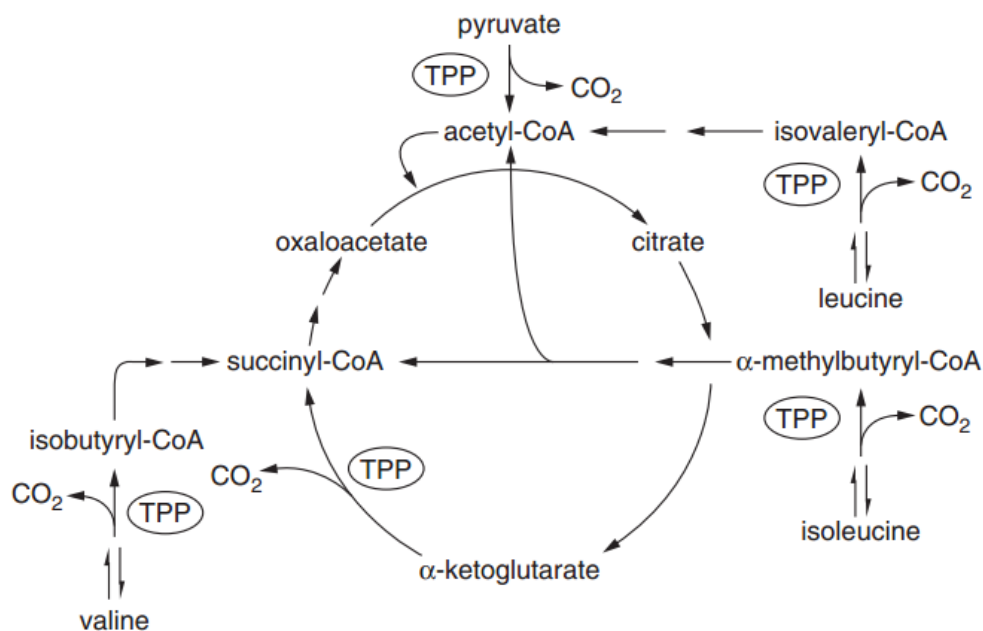


Similarly, in nervous tissue, TMP may hydrolyzed to thiamin by thiamin monophosphates.



The human body contains approximately 30 mg of total thiamin, of which approximately 80% is TPP, 10% is thiamin triphosphate, and the rest is thiamin monophosphate and free thiamin. About half of the body content of total thiamin is found in skeletal muscles, the remainder being distributed mainly in the liver, heart, kidney and brain. The biological half-life of [14C] thiamin in the body is 9 to 18 days. Because of this relatively high turnover rate and low storage.





**Fig. 3 Involvement of thiamin pyrophosphate (TPP) in the tri carboxylic acid cycle.**

In mammalian tissues, TPP is a coenzyme for three mitochondrial enzymes involved in the oxidative decarboxylation of  $\alpha$ keto acids; these enzymes are the pyruvate dehydrogenase complex (EC 1.2.4.1),  $\alpha$ -ketoglutarate dehydrogenase (EC 1.2.4.2) and branched-chain  $\alpha$ -keto acid dehydrogenase (EC 1.2.4.4). The involvement of these dehydrogenases in the tri carboxylic acid cycle is shown in Fig. 3. In addition, TPP is a coenzyme for transketolase (EC 2.2.1.1), which is found in the cytosol. [1].

### 3.3 Overview

There is increasing evidence that vitamin B1 specifically thiamin triphosphate, is somehow involved in nerve membrane function. This property appears to be independent of the known coenzyme role of TPP. The evidence is substantiated by the finding that thiamin triphosphate, which accounts for 1% of total thiamin in rat brain, makes up 90% of total thiamin in the electric organ of the electric eel [8]. In the lamb, vitamin B1 deprivation for 4 weeks led to a 20% depletion of total thiamin in the brain, with a similar percentage loss of free thiamin, thiamin monophosphate and TPP. There was, however, no appreciable fall in thiamin triphosphate [9].

Most of the vitamin B1 present in the brain and peripheral nerves is in the coenzyme form, TPP. The 1% or so of thiamin triphosphate is existing in whole brain and largely concentrated in the membrane fraction [10]. Fluorescence microscopy shows that the vitamin is localized in the membranes of peripheral nerves rather than in the axoplasm

[11]. A complete set of enzymes catalyzing the interconversion of thiamin and its phosphate esters has been isolated and purified from nervous tissue [12]. As discussed in the following, vitamin B1 may play a direct role in nerve conduction or it may be implicated in nerve transmission.

#### **4 Vitamin B1 deficiency**

##### **4.1 Causes and effects**

A deficiency of vitamin B1 may occur in situations of poor diet, chronic alcoholism, excessive diarrhoea or vomiting, malabsorption and genetic metabolic defects. Overloading the tissues with glucose without adequate thiamin coverage can precipitate deficiency, as can the use of diuretics. Diseases in which the metabolic rate is elevated (e.g. hyperthyroidism) can also lead to deficiency. Some researchers have demonstrated that secondary deficiency of a particular B-group vitamin can be induced by excessive dosing with another vitamin of this group. On the other hand, deficiencies in vitamins B6 and B12 induced vitamin B1 deficiency in rats, even when dietary thiamin levels were normal [13]. Howard [14].confirmed that folate deficiency in rats impairs thiamin absorption.

In humans, a lack of vitamin B1 has widespread effects, causing anorexia and associated weight loss, gastrointestinal disturbances, peripheral and central neuropathy, muscle weakness, and cardiovascular irregularities. With severe vitamin B1 deprivation, mental changes develop such as loss of emotional control, paranoid trends, manic or depressive episodes and confusion. The classic disease resulting from a gross deficiency of vitamin B1 in humans is promptly reversed by the administration of 5–10  $\mu\text{g}$  of thiamin. If no more thiamin is given, severe signs reappear in 3–6 days. Pathological examination of the nervous systems of rats which experienced several bouts of deficiency disclosed anatomical lesions of certain parts of the brain. The lesions consisted of areas of tissue destruction and a marked proliferation of glial cells.

Within the center of lesions all modulated nerve fibers were destroyed [15]. Experimental vitamin B1 deficiency is produced more rapidly (12–16 days) and more effectively by the use of Pyriethiamin, a direct antagonist of TPP that also crosses the blood–brain barrier.

When [14C] glutamate was injected into the brains of vitamin B1-deficient rats, the specific radioactivity of GABA in the brains rose by 45–50%, suggesting a considerable increase in GABA shunt activity [16]. This increase in brain GABA level may explain the anorexia observed in vitamin B1-deficient rats. GABA aminotransferase, the enzyme principally responsible for GABA catabolism, is selectively inhibited by 1-(n-decyl)-3-

pyrazolidinone. When this inhibitor was administered to rats, brain GABA levels were increased three-fold and anorexia was observed in the absence of other symptoms [17]. This finding is consistent with speculations that GABA is implicated in appetite-controlling mechanisms [18].

### **Human studies**

The combined results from the several human studies have shown that inducement of vitamin B1 deficiency in adults produces a wide range of disorders involving the gastrointestinal tract, central and peripheral nervous systems, and cardiovascular system. Anorexia is a constant finding. Indigestion results from hypochlorhydria. Gastric atony results in severe constipation through lack of gut motility. Thus, when a barium meal is given, there is incomplete emptying of the stomach and pooling of the barium in segments of the small intestine, producing the so-called stepladder pattern. Changes in mood are an outstanding finding. There are paresthesia as with a stocking or glove type distribution, and impairment in perception of light, touch, pin prick, temperature and vibratory sensation. Subjects experience difficulty in rising from a squatting position owing to weakness of the calf muscles. The deep tendon reflexes (patella and Achilles) disappear after a while.

Electrocardiograms show irregularities, and subjects complain of shortness of breath, consciousness of the heartbeat, irregularities in heart rhythm and discomfort in the chest after exertion.

Biochemical changes include increased concentrations of pyruvate and lactate in the blood, particularly after exercise or the administration of glucose. Severe lactic acidosis can be life threatening.

### **4.2 Beriberi**

The development of beriberi, its symptoms and its pathology are extremely variable, making it difficult to describe a clinical picture or sequence of development. Many of the early writers described three forms of beriberi in adult humans: dry (wasting) and wet (edematous) beriberi, which are chronic forms, and acute, fulminating (cardiac) beriberi. Which of these forms predominates depends on the circumstances. Vitamin B1 deprivation accompanied by malnutrition and low physical activity tends to favor beriberi presenting in the dry form, whereas high carbohydrate intake and high physical activity during vitamin B1 deprivation predispose to wet beriberi. It should be emphasized that any one of these forms may merge into another [1].

Dry beriberi is a disease of the peripheral nervous system involving bilateral impairment of sensory, motor and reflex functions. The pathological findings are segmental thinning of

myelin in peripheral nerves, progressing to degeneration of fiber tracts. The neuropathy begins in the feet and legs and then extends up the body. Early signs of dry beriberi often include sensations of pins and needles and numbness in the feet. The legs, especially the calves, feel heavy and weak so that walking becomes uncomfortable. As the disease progresses, there is a marked wasting of the leg muscles and even slight pressure applied to the calves elicits severe pain. The characteristic foot and wrist drop develop and there may be complete flaccid paralysis of the lower, and occasionally upper, extremities.

In wet beriberi, vitamin B1 deficiency affects the cardiovascular system by causing arteriolar dilation throughout the circulatory system and by weakening the heart muscle. The vasodilation causes a two-fold increase in the venous return of blood to the heart. Physical signs of wet beriberi are indicative of high-output cardiac failure; they include tachycardia, rapid Wernicke Korsakoff syndrome. Thus, for example, the nystagmus is due to damage of the sixth cranial nerve; the ataxia is related to loss of neurons in the superior vermis of the cerebellum; and the amnesia is associated with atrophy of the mammillary bodies.

Although the Wernicke–Korsakoff syndrome results from a lack of dietary vitamin B1, two clinical observations suggest that genetic factors are important in its pathogenesis: it develops in only a small majority of alcoholics and other chronically malnourished persons, and it occurs much more frequently among Europeans than among Asians [1].

The possibility of a genetic effect was investigated by [19]. who found that transketolase in tissue-cultured cells from patients with Wernicke–Korsakoff syndrome was abnormal in that the binding of TPP to the Apo-enzyme was diminished. The abnormality persisted through more than 20 generations of culture in medium containing excess thiamin and no ethanol, and therefore appeared to be genetic rather than dietary. Thus the abnormal enzyme appears to be a structural mutant. Persistent aberrations had previously been found in erythrocyte transketolase from these patients, even after they had been treated with thiamin for months while in hospital. The abnormality appeared to be specific for transketolase as pyruvate dehydrogenase and  $\alpha$ -ketoglutarate dehydrogenase were unaffected.

Because the symptoms of Wernicke’s disease can be alleviated following the administration of thiamin, the abnormal transketolase is presumably clinically unimportant if the diet is adequate. This type of genetic abnormality is an example of an inborn predisposition to metabolic disorders. Unlike inborn errors of metabolism, inborn predispositions are likely to be clinically silent unless the person with the predisposition faces an

appropriate stress. In cases of Wernicke–Korsakoff syndrome, the stress is a deficiency of vitamin B1 [20]. demonstrated a highly significant association between a particular variant of erythrocyte transketolase and the Wernicke–Korsakoff syndrome, supporting the concept that the syndrome has a genetic as well as a dietary origin.

### 4.3 Treatment of beriberi

Beriberi is treated with a proprietary thiamin preparation, the dosage and route depending on the patient’s condition. To prevent further recurrences, a good diet containing all of the B-group vitamins should be instituted. Severe cardiac (shoshin) Beriberi and Wernicke–Korsakoff syndrome constitute medical emergencies requiring immediate treatment with thiamin, given intravenously. Treatment of Wernicke–Korsakoff syndrome will eradicate the symptoms of encephalopathy (with abstinence of alcohol), but the psychosis is irreversible.

### Effects of high intake

Thiamin is non-toxic by the oral route because excess amounts of ingested thiamin are rapidly excreted in the urine. Large parenteral doses of thiamin administered over a long period have been reported to produce clinical manifestations and, in some cases, even death [21].

TABLE 1 Comparison of Recommended Dietary Allowances for thiamin and “Reference Daily Intake” (RDI) Currently Used in Nutritional Labeling in the United States [22].

Category	Age (years)	Vitamine B1 or Thiamin
Infants	0.0-0.5	0.3
	0.5-1.0	0.4
Children	1-3	0.7
	4-6	0.9
	7-10	1.0
Males	11-14	1.3
	15-18	1.5
	19-24	1.5
	25-50	1.5
	51+	1.2
Females	11-14	1.1

	15-18	1.1
	19-24	1.1
	25-50	1.1
	51+	1.0

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## ЖАМИЯТДА ЖИСМОНИЙ МАДАНИЯТНИ ШАКЛЛАНИШИНИНГ ТАРИХИЙ-ФАЛСАФИЙ ХУСУСИЯТЛАРИ

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### АННОТАЦИЯ

Мақола жисмоний маданият шаклланишининг жамият ҳаётидаги тарихий-фалсафий жиҳатларини таҳлил этишга бағишланган. Унда жисмоний маданиятни инсон саломатлигига ижобий таъсир этиши тўғрисида мулоҳазалар келтирилган.

**Калит сўзлар:** жисмоний маданият, жисмоний тарбия, гимнастика, саломатлик, гўзаллик, форовонлик, баркамоллик.

### ABSTRACT

The article is devoted to the analysis of the historical-philosophical aspects of the formation of physical culture in the life of society. It contains comments on the positive impact of physical culture on human health

**Keywords:** physical culture, physical education, gymnastics, health, beauty, well-being, well-being

### КИРИШ

Қадимги мутафаккирлар биринчилардан бўлиб инсон танасига эътибор қаратганлар. Жисмоний тарбиянинг энг ёрқин ва мукамал масалалари Платон ва Аристотель асарларида баён этилган. Масалан, машҳур қадимги юнон файласуфи Платоннинг ёзишича, саломатлик, гўзаллик ва тана нисбатларининг тўғри бўлиши нафақат санъат соҳасида билим ва фанларни билиш, балки бутун умр давомида жисмоний машқлар ва гимнастика билан шуғулланишни ҳам талаб қилади. Баданга сиғиниш қадимги Юнонистонда бизнинг эрамиздан олдин ҳам шакллана бошлаган. Қадимги Юнонистонда инсоннинг жисмоний тарбиясига катта эътибор берилган, чунки юнонлар жуда машҳур спарта таълимига эга эдилар, бу эса ўз навбатида тор ҳарбий йўналтирилган эди. Юнонлар жисмоний машқлардан фойдаланишининг иккита вариантини ажратдилар: гимнастика, яъни умумий жисмоний тарбия ва агонистика, махсус тайёргарлик ва мусобақаларда қатнашиш. Гимнастика, ўз навбатида, умумий жисмоний тайёргарликни шакллантирадиган турли машқлардан иборат бўлган -





палестрия, нафисликни ривожлантириш, пластика, тўғри туриш, чиройли тана шакллари шакллантириш учун рақс ҳаракатлари - оркестр ва очик ўйинлари шулар жумласидандир.

## АДАБИЁТЛАР ТАҲЛИЛИ ВА МЕТОДОЛОГИЯ

Платон спарталиқ таълим тизимининг тарафдори эди, аммо ақлий таълим доирасида сезиларли тарафқашликка эга эди. У мактабгача ёшдаги болаларни тарбиялашга катта эътибор берди. Бундан ташқари, бу таълим ўйин шаклида бўлиб ўтди. Ўйинлар шундай қурилганки, болалар ёшлигидан катталарнинг қийин турмуш тарзига ўрганадилар. Болаларга ҳатто жанговар ҳаракатларда қатнашишга руҳсат берилди, лекин томошабин сифатида улар учун хавфсиз масофада бўлиши талаб этилган. Платон таълимнинг изчил давлат тизимини қуриш ҳақида гапирди ва ақлий ва жисмоний тарбия фақат "ёшлар гигиеник табиат қоидаларига риоя қилган ҳолда ўзини тутмаслик турмуш тарзини олиб борсалар" ижобий таъсир кўрсатади, деб ҳисобларди. Шу маънода жисмоний тарбия соҳасида қарашларнинг пайдо бўлиши ҳақида гапириш мумкин. Қадимги бошқа бир мутафаккир Аристотел ҳам жисмоний тарбияга улкан ўрин ажратади ва танага ғамхўрлик қилиш, албатта, руҳга ғамхўрлик қилишдан олдин бўлиши кераклигини таъкидлайди. Шу билан бирга, Аристотель спарталиқ жисмоний тарбия тизимига кескин қарши чиқиб, тана таранглиги интеллектнинг ривожланишига тўсқинлик қилишини кўрсатди. Таълимда, Аристотелнинг фикрича, ҳайвон эмас, гўзаллик асосий рол ўйнаши керак. Аристотель тана тарбияси ҳақида гапирар экан, енгил гимнастика машқларини афзал кўради. Чиройли атлетик танани тан олиш ва жисмонийликни мақташ даври танага душманлик билан муносабатда бўлган тарихдаги янги босқич билан алмаштирилади. Табиий истак ва майлларни бостиришни тарғиб қилувчи, илоҳий иноят оламига гуноҳкор, танавий, ердаги нарсаларни қарши кўювчи ўрта аср христиан аскетизми бошқа насронийлик амалиётлари билан алмаштирилади.

Антик даврдан то ҳозирги кунгача қўйилган жисмоний маданият ҳақидаги ғояларнинг ривожланиш йўли инсон мавжудлигининг қадрияти сифатида танавийликнинг доимий аҳамиятини кўрсатади. Жамият ҳаётининг энг муҳим маҳсулоти маданиятдир. Маданият табиатан ҳам, ифода ва фаолият кўрсатиш шаклларида ҳам хилма-хил ҳодисадир. У жамиятнинг моддий ва маънавий ҳаётдаги ютуқлари йиғиндисини қамраб олади, инсон ва инсониятнинг интеллектуал ривожланиш даражасини, ижтимоий фаолиятни тартибга солувчи



қадриятлар ва меъёрлар тизимини, ахлоқий ҳолатни ва бошқаларни акс эттиради. Жисмоний маданият шахс умумий маданиятининг ажралмас таркибий қисмидир. Бу восита фаолиятидаги ҳаётий эҳтиёжларни қондириш соҳаси бўлиб, стратегик вазифани амалга ошириш усуллари ва воситаларини таъминлайди.

Жисмоний маданият қадимдан, асосан, табиий фанларнинг (хусусан, биотиббидинг) ўрганиш объекти бўлиб келган. Аммо жисмоний маданият жамиятнинг тарихий-фалсафий тараққиёти маҳсулидир. Уни ўрганиш кўплаб фанларнинг предмети ҳисобланади. Буни, биринчи навбатда, тизимли, интеграл, яъни эътиборга олиш керак. ижтимоий-фалсафий жиҳати. Тизимли фалсафий ёндашувга бўлган бундай эҳтиёж инсоннинг ижтимоий ва табиий муҳитдаги ўзига хос мавқеи билан боғлиқ.

Жисмоний маданият жисмоний ва маънавий бирликни уйғунлаштиришга ёрдам беради, умуминсоний қадриятларни (соғлиқ, фаровонлик, баркамоллик ва бошқалар) шаклланишини таъминлайди. Жамият ривожланишининг ҳар бир босқичи жисмоний маданиятнинг ўзига хос шакли билан тавсифланади, у бутун ижтимоий омилар тизимининг таъсири остида шаклланади, уларга сезиларли таъсир кўрсатади. Жисмоний маданиятнинг ижтимоий функциялари эволюциясини ўрганиш шуни кўрсатадики, турли тарихий даврларда жисмоний маданият ривожланишида муайян ижтимоий эҳтиёжлар мавжуд бўлган. Антик даврдаги жисмоний маданиятнинг фалсафий тушунчаси Аристотель, Платон, Сократ асарларида мавжуд. Улар баркамол шахсни тарбиялашнинг асосий тамойилини учта элемент: жисмоний, ахлоқий ва ақлий ўзаро боғлиқлик деб билишган. Идеалист файласуф Платон (милоддан аввалги 427-347) руҳий ва жисмоний сифатларнинг уйғун ривожланиши назариясини асослаб берди. Унинг тизими кенг қамровли мақсадни кўзлаган унинг жисмоний меҳнатга нисбатан нафрат билан, файласуфлар ва жангчиларнинг ижтимоий гуруҳларини тарбиялашдан иборат бўлган. У математика билан шуғулланадиган ёки кучли фикрлаш ҳаракатини талаб қиладиган нарса билан шуғулланадиган киши гимнастика билан шуғулланиб, танага керакли машқларни ҳам бериши кераклигини таъкидлайди. Инсон кучини - жисмоний, ақлий ва маънавий - аста-секин фанга - ёга - қобилиятларни ривожлантириш усуллари ўрганиш бўйича энг қадимги тажриба медитацияда ётади. Платоннинг шогирди, энг буюк олим ва файласуф Аристотел (милоддан аввалги 384-322) руҳ ва тана ажралмас тарзда мавжуд деб ҳисоблаган. Аристотелнинг фикрича, инсон қалбининг уч тури - сабзавотли, ақлли ва кучли иродали - жисмоний, ақлий ва ахлоқий тарбияга мос келиши



керак. Аристотел: "Узоқ вақт давомида жисмоний ҳаракатчилик каби ҳеч нарса одамни бузмайди". Бундан ташқари, у жисмоний маданиятнинг эстетик томонига катта аҳамият берди. Сукрот (милоддан аввалги 469-399) ҳам жисмоний ва маънавий кучларнинг уйғун ривожланишини зарур деб ҳисоблаган, инсоннинг руҳий ҳолати унинг жисмоний соғлиғига боғлиқлигини кўрсатган. Унинг ўзи кекса ёшига қадар гимнастика ва рақс билан шуғулланган.

Қадимги юнонлар сингари, қадимги Хитой ҳам жисмоний маданият соҳасида ўзига хос идеаллар тизимини ишлаб чиқди. Хитой йилномаларида жисмоний маданиятнинг пайдо бўлиши милоддан аввалги 3-минг йиллик бошларига тўғри келади. Унинг мазмунига даосизмнинг шаклланиши таъсир кўрсатди. Юнонлардан фарқли ўлароқ, хитойликлар ҳеч қачон руҳ ва материяни ажратмаган. "Тана руҳлар учун бирлик ва уй эди, шунинг учун тананинг абадийлиги бутун ҳаётнинг давом этишини таъминлаши мумкин эди". Жисмоний маданият қадриятларини шакллантиришнинг асосий тамойили - жамиятга фойда келтириш, ирода, характер ва ривожланган дидга эга. Прагматик натурал-фалсафий қарашлар ва тиббий билимлар Хитойда жисмоний маданиятнинг ижтимоий ролига катта таъсир кўрсатди. Даоист ритмик нафас олиш билан бошқарилади. Шундай қилиб, йога фалсафий тизими инсон танаси коинотнинг қисқартирилган нусхаси бўлган концепцияга асосланади, унинг мувозанати прана (нафас, ҳаёт кучи) томонидан таъминланади. Шарқ мамлакатларида жисмоний маданият инсон тарбияси ва унинг турмуш тарзининг бир бўлаги бўлиб, нафақат жисмоний текисликда, балки ахлоқий, психологик, маънавий жиҳатдан ҳам баркамол шахснинг камол топиши ва шаклланишига хизмат қилади. Кўп асрлик сабъ-ҳаракатлар натижасида ўзига хос диний-фалсафий тизимлар шаклланди.

Ўрта асрлар маданиятида инсон жисмонийлигига муносабат икки томонлама характерга эга эди. Бир томондан, христиан фалсафаси танани руҳнинг нажот йўлини оғирлаштирадиган ришталар сифатида талқин қилди, бу айниқса гностик насронийларнинг таълимотларида аниқ намоён бўлди. Бошқа томондан, ўрта аср рицарлигининг сарой маданияти жисмонийликни култ даражасига кўтариб, имо-ишоралар ва жисмоний машқларни рамзий маънога эга бўлган: йигитнинг рицарлиги елкасига зарба бериш билан бирга келган, дуелга даъвогарлик рамзий маънога эга эди.

Григорий танани "жоннинг жирканч идиши" деб атайди ва инсоннинг идеали - гўштини ўлдирадиган роҳиб. Бу давр маънавий, олижаноб, мутлақ "юқори" га яқин бўлган ва тана, жисмонан, худосиз "пастки" ўртасидаги қатъий фарқни кўрсатади.



Инсон танаси гуноҳкор, шунинг учун уни ўлимга маҳкум қилиш керак, деб таъкидланади. Ўз-ўзини йўқ қилиш ва танани жазолашнинг турли хил амалиётлари мавжуд. Шунини таъкидлаш керакки, ўрта аср фалсафасида руҳ ва тананинг бирлиги муаммоси долзарбдир. Ф.Аквинский шахснинг жон-тана мавжудот эканлигини кўрсатади ва у руҳ (шакл) ва тана (материя) ўртасидаги узвий боғлиқлик шахсга субстантив яхлитликни беради. Ўз даври учун ўзига хос ва инқилобий француз мутафаккири Ж.-Ж. Руссо томонидан таклиф қилинган шахснинг табиий жисмоний тарбияси концепцияси эди. У “Эмил, ёки тарбия ҳақида” рисолида жисмоний маданият ва тарбия ҳақидаги фикрларини баён қилган. Таълимнинг асосий манбалари, Ж.-Ж. Руссонинг сўзларига кўра, учта асосий омил мавжуд - табиат (инсоннинг табиат томонидан берилган қобилиятларини ривожлантириш), одамлар (бирининг тажрибасини ўзлаштириш, жамиятга кўникиш), нарсалар (одам дуч келадиган нарсага нисбатан ўз хатти-ҳаракатлар моделини ишлаб чиқиш)дан иборат.

Ж.-Ж. Руссо боланинг хулқ-атворини зўрлашсиз, мажбурлашсиз назорат қилиш керак, шунда боланинг ўзи тўғри қарор қабул қилиши керак деб ҳисобларди. Француз файласуфи ўз назариясида таълимнинг ёш босқичларини таклиф қилади. Хусусан, муаллиф ривожланишнинг тўртта даврини белгилайди - туғилишдан нутқ пайдо бўлгунга қадар (тахминан икки ёшгача) - жисмоний тарбияга эътибор, икки ёшдан 12 ёшгача - сенсорли тарбия, 12 ёшдан 15 ёшгача - ақлий тарбия ва ундан бошлаб 15 ёшдан 18 ёшгача – ахлоқий босқич шулар жумласидандир. Аммо йигит – фуқаро бўлиб етишиш жараёни, Ж.-Ж. Руссо, фақат 25 ёшда тугайди.

Тана маданияти нуқтаи назаридан жуда муҳим, Руссога кўра, биринчи ва иккинчи давларни ўз ичига олади. Боланинг соғлиғи яхши бўлиши учун уни туғилгандан бошлаб мустаҳкамлаш керак - болани маҳкам боғлашнинг ҳожати йўқ, уни шашка ва совуқ ҳаводан ҳимоя қилишнинг ҳожати йўқ, энг яхшиси қаттиқлашади. Икки ёшдан 12 ёшгача бола табиатда имкон қадар кўпроқ вақт ўтказиши керак. У ўз атрофидаги дунёни мустақил равишда ўрганиши ва ҳис қилиши керак - оловдан сакраб ўтиши, дарахтларга кўтарилиши, югуриши, очиқ ўйинлар ўйнаши, турли текстуралар ва сиртларга тегиши керак. Мунтазам жисмоний машқлар, Руссонинг фикрига кўра, боланинг тана ривожланишига ижобий таъсир қилади. Бундан ташқари, Руссонинг фикрича, боланинг ақлий кучларини ривожлантиришнинг энг муҳим воситаларидан бири меҳнатдир. Бола нафақат кундалик ҳаётда зарур бўлган барча воситалардан фойдаланишни ўрганиши керак, балки баъзи ҳунармандчиликни ҳам эгаллаши керак. Бу унга келажакда



ўзини ва оиласини боқишга ёрдам беради. Шу билан бирга, ҳар қандай меҳнат фаолияти ақлий машқлар билан бирлаштирилиши керак. Бундан ташқари, битта нарса ажралмас бўлиши учун бошқасидан шунчаки дам олиш керак. Боланинг эмас, балки "бўронлар ва эҳтирослар" даври бошланган 15 ёшдан 18 ёшгача бўлган ёшларнинг ахлоқий тарбияси ҳақида ғамхўрлик қилиш керак. Эраклик даврида инсон "одам каби" яшашни ўрганиши керак.

Жисмоний маданиятнинг фалсафий-мафкуравий ва ижтимоий-маданий таҳлили турли тарихий даврларда инсон танасига ва жисмоний тарбия масалаларига муносабатнинг ўзгаришини кўрсатади. Қадимги юнонлар тананинг жисмоний баркамоллиги ғояси билан шунчалик сингиб кетганларки, жисмоний тарбия масалалари муҳим рол ўйнаган. Қадимги Юнонистонда тананинг гўзаллигига сиғиниш шаклланган. Жисмоний тарбияда, юнон файласуфларининг фикрича, соғлиқни сақлаш ва оширишнинг ўлчови, ягона йўли бўлиши керак.

Ўрта асрлар даври инсон танасига нисбатан жуда салбий муносабатда бўлиб, гўзал танани улуғлаш ва улуғлаш ўрнига келади. Бу маънода олтин ўртача француз мутафаккири Ж.-Ж Руссо томонидан таклиф қилинган табиий жисмоний тарбия тушунчаси деб аташ мумкин. Йигитнинг жисмоний тарбияси билан узвий ва изчил шуғулланишни таклиф қилган - болаликдан мунтазам жисмоний машқлар билан шуғулланишни таклиф қилади, уларга аста-секин меҳнат (хунармандчилик) фаолияти ва ақлий машқларни қўшиб (ўсмирлик даврида) ва ахлоқий тарбия билан яқунланади. Ж.-Ж. Руссонинг иши жаҳон фалсафий тафаккурининг ривожланишига жуда кучли таъсир кўрсатди.

## ХУЛОСА

XVI аср охирига келиб. фалсафа илоҳиётдан мустақил билим соҳаси сифатида яна бир бор тасдиқланди. Фалсафий фикр воқеликка бурилади. Гуманистлар баркамол инсоннинг эстетик идеалини маъқулладилар, шахснинг жисмоний ва маънавий ҳаракатлари ўртасидаги боғлиқликни тан олдилар. Теологик қарашлардан фарқли ўларок, у эълон қилинган. Жисмоний маданиятни тушуниш учун тарихий ва фалсафий шартлар инсонга сиғиниш, шахснинг жисмоний баркамоллиги масаласи кескин кўтарилди. Уйғониш даврида гуманистлар инсондаги танани қайта тиклашга ва шу орқали "маънавий" ва "тасний" ўртасида уйғун бирликни ўрнатишга ҳаракат қилишди. Хуллас, Ж. Манетти ўзининг "Инсон кадр-қиммати ва устунлиги ҳақида" асарида инсон танасининг имкониятларини ўрганиб хайратга тушади. Инглиз



мутафаккири Т.Мор (14781535) “Утопия” очеркида Платон “Давлат”да билдирган фикрларни давом эттиради. Жисмоний тарбия, унинг фикрича, инсоннинг баркамол ривожланишининг зарур элементи бўлиб, унга ва жамиятнинг барча аъзоларининг саломатлигига ғамхўрлик қилиш давлат иши бўлиши керак. У «Қуёш шаҳри» эссесига Т. Мор ва Т. Кампанелла (1568-1639) ғояларини кўп жихатдан такрорлади. Жисмоний маданиятни тушунишдаги инсонпарварлик ғоялари Янги давр фалсафий тафаккурида давом этмоқда. Жамият ҳаётида жисмоний маданиятнинг роли ортиб бормоқда.

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## A BRIEF LOOK AT THE ROLE OF MATHEMATICS IN MEDICAL PROGRESS

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### ABSTRACT

Every day we see new developments in medical science, and considering that the level of public health and the information of different sections of society has improved compared to the past, we see that today people are more willing to use more accurate methods in the field of medicine to diagnose and treat diseases, so the use of mathematical knowledge in medicine as an important tool has attracted the attention of doctors. The purpose of this article is to highlight several applications of mathematics in medicine, including cardiovascular disease, diabetes, surgery, cancer, and medical imaging.

**Keywords:** mathematical medicine, cancer, Diabetes mellitus, Diabetes, Cardiovascular diseases, computational surgery

### Introduction

As an inescapable element in the fabric of existence, mathematics has always lived with mankind and can be seen in various fields of life. The special order that governs the rotation of the wheel, from the rotation of the earth around the sun to the weaving of a spider's web, is all mathematical stories. From a historical perspective, one can understand the role of mathematics in the progress of various sciences and realize that mathematics has been used as a powerful tool in all these developments. Mathematics is not exempt from this, and it can even be said that many doctors were great mathematicians in the old days. Mathematics has a long history in medical research. Even in the ancient world, scientists and philosophers tried to find harmony in the structure of the human body. For example, the golden section is used to describe the relationships between different parts of the body [1]. As numerous studies have shown, mathematical modeling is a powerful tool for testing hypotheses, verifying experiments, and simulating the dynamics of complex systems [2]. On the other hand, these models can fundamentally improve both drug development and hospital technology [3]. Considering the above, it can be said that one of the most important parts of medicine is mathematics, because all the equations, graphs, statistics, and mathematics that



we learned in school and university help us understand the important aspects of medicine in general [4].

### Cardiovascular diseases

Cardiovascular diseases are one of the most common causes of death in developing and developed countries. The latest scientific research in this case shows that continuous and round-the-clock screening for timely diagnosis and prognosis of health status with the aim of improving the quality of life and reducing complications can reduce cardiovascular diseases [5].

One of the important things to overcome this problem is the mathematical modeling of blood flow and electrical activity of the heart, which has attracted the attention of medical mathematics researchers in the past decades, and so many studies have been conducted on it. [3].

Many people in the community are examined using an electrocardiograph (ECG) when they suspect or have a heart problem.

An ECG is a simple heart test that measures the size and rhythm of electrical signals in the heart through electrodes placed on the patient's chest, legs, and arms to ensure heart health.

This data is then shown on graph paper (Figure 1A). An ECG chart has a certain shape, and different peaks and troughs are denoted by different letters. The atria, or upper chambers of the heart, contract during the P wave. QRS indicates the contraction of the ventricles (lower parts of the heart). The R wave represents the largest wave, as the ventricles are the largest part of the heart, and represents the final part of the cycle with the T wave. In order to understand whether the heart is working properly or not, one must carefully examine the different parts of the ECG chart. If these waves appear abnormal in shape or timing, the heart may be functioning abnormally (Figure 1). The distance between the R waves indicates the heart rate. A fast heart rate is called tachycardia, and a slow heart rate is called bradycardia. Both disorders can even be life-threatening.



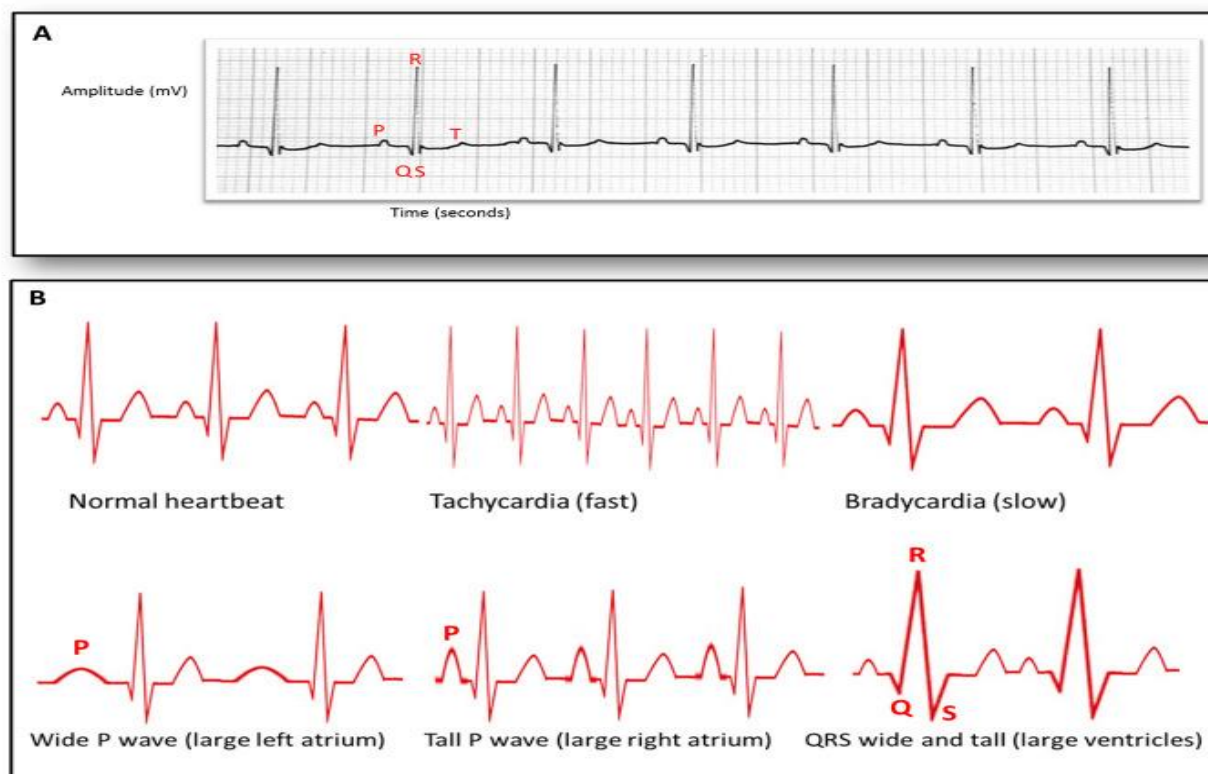


Figure 1. Comparison of healthy and diseased hearts.

An abnormally wide P wave can mean left atrial enlargement, while a longer P wave can mean right atrial enlargement, and abnormalities in the T wave can have many causes, are quite common, and do not always cause significant problems. If the QRS complex is wide and long, the ventricles may be enlarged. This is known as cardiomegaly and can be a sign of a heart tissue infection, heart failure, or high blood pressure [4].

### Cancer

Cancer is one of the deadliest diseases in the world, and it is the second cause of death in the world after cardiovascular diseases [8]. According to World Health Organization research in 2018, out of 9.6 million deaths, 1 in 6 were caused by cancer. Nearly 70 percent of deaths in developing countries are predicted to be caused by cancer.

Cancer disease generally starts with genetic mutations and leads to an abnormal increase in cells and the rate of cell proliferation. A number of researchers are engaged in research to find a suitable and low-cost solution to treat people with cancer and improve their immune systems, which will enable them to fight cancer [7].

The scientific research conducted in this case proves that mathematical models are very useful for the precise understanding

of the mechanisms and processes of cancer and have been used to suggest new tests, propose different treatment methods, and change the risk prognosis [6].

Among the mathematical models that are used to treat and control cancer, we can mention the logistic and Gompertz models, which are more useful than other mathematical models [7].

### **Diabetes**

Glucose, or sugar, that is received as a result of nutrition is very important and valuable for the human body because the cells of the body use it as a fuel and energy source. However, sometimes a situation occurs in which the human blood glucose level exceeds the normal range (75–110 mg/dl) for a long time, causing people to develop diabetes [10].

Diabetes is one of the metabolic diseases that many people in the world suffer from. This disease occurs with chronic hyperglycemia due to defects in insulin secretion, insulin action, or both [9]. In 2017, approximately 4 million people died from diabetes, and approximately 425 million adults were diagnosed with diabetes.

Statistical research shows that by 2045, the number of people with diabetes will reach 629 million. In the world, more than 1,106,500 children have type 1 diabetes, and more than 21 million babies are affected by this disease during pregnancy. About 352 million people in the world are at risk of developing type 2 diabetes. Due to the increasing number of deaths brought on by diabetes, India fell from number 11 in the world in 2005 to number 7 in 2016. According to study estimates, there are around 70 million diabetics in India. Research shows that this number will more than double in the next ten years [10].

Diabetes is a chronic disease that occurs as a result of increased blood sugar levels in humans. Mathematics plays a fundamental and very important role in the diagnosis, monitoring, and treatment of blood diabetes, as well as investigating its complications.

One of the mathematical applications in blood diabetes is to calculate the dose of blood sugar-controlling drugs. The dose of blood sugar control drugs should be determined based on the patient's blood sugar level. For example, if the patient's blood sugar level is higher than the limit, the dose of the drug should be increased. Mathematical methods such as statistical analysis and feedback control are used to determine the appropriate dose of medicine. Also, mathematics is used in predicting and preventing the complications of diabetes. For example, using mathematical models, it is possible to predict how changes in blood sugar levels can affect the health of a patient's blood vessels and nerves. Also, mathematics is very important in determining the limits of normal

blood sugar levels and diagnosing diseases according to blood sugar levels. Using mathematical and statistical analysis, it is possible to determine the normal ranges of blood sugar levels, and by examining the patient's blood sugar levels, the diagnosis of diabetes can be confirmed or rejected. In general, mathematical and statistical modeling is very important and effective in the diagnosis, prediction, and treatment of blood diabetes [11].

### **Computational surgery**

In recent years, mathematics has played an important role in medical planning and modeling and has achieved tangible successes in various departments such as craniofacial surgery, liver surgery and orthopedic surgery [13]. Computational surgery is defined as a completely new science whose aim is to modernize surgery using new technologies and accurate calculations. Today's advances in the field of surgery can be attributed to the use of mathematical calculation techniques and the introduction of new technologies in this field. Consider, for instance, how advances in medical imaging and robotics have increased the effectiveness of diagnosis or how the research of crucial domains that influence the outcomes of surgical operations, such as genetics and physiology, heavily depends on computational methods.

The biggest challenges in modern medicine are based on a deep understanding of the biological processes that play a role in their regulation. Medicine is mainly based on biological systems, and it seems complicated to achieve deep knowledge of them. Complexity means that biological systems are often regulated by non-linear processes, which are more difficult to replicate precisely. It is worth remembering that the inherent complexity of the underlying "bricks" that biological systems are made of cannot help us understand the systems themselves. One should think about the complexity of the structure of a cell and try to show its complexity at higher levels such as an organ, a tissue, or a complete system.

Mathematical models play an essential role in various sciences, including medicine, and significantly improve public knowledge and strengthen medical research. Mathematical models are able to reproduce certain events by taking into account the complexity of various regulating factors and allowing researchers to better understand the effect of external factors and stimuli on the system. As we know, mathematical models are also suitable for computer simulation.

As a result, it is simple to model in Silico the reaction of a biological system to various situations, and on a larger scale, it is possible to anticipate in advance how a certain approach would perform over the long run. Predicting in advance a clinical or experimental result and having the ability to

study it is one of the advantages associated with modern medicine.

It should be remembered that biological experiments are time-consuming and expensive, and the ability to mathematically simulate a system is considered very important to reduce costs and time. Mathematical models can easily check the effects of disturbances applied to the system. Disturbances in medicine can be seen in different areas, including a specific surgery, a drug, the use of a prosthesis, etc. Therefore, it can be said that mathematics plays a significant role in computational surgery [12].

### **Other applications of mathematics in medicine**

In order to examine different parts of the body, such as teeth, heart structure, blood vessels, bones, or other organs, doctors and medical specialists may want to take pictures if necessary. For this purpose, various methods of imaging from inside or outside the body are used, including computed tomography (CT), ultrasound, X-ray, magnetic resonance imaging (MRI), etc., which requires an urgent need for mathematics. And these measurements must be done very precisely because the smallest mistake in medicine can cause confusion for doctors or even the death of the patient [4].

Although we are less aware that dentists use mathematics to calculate the dosage of anesthetics, convert numbers, measure teeth for root canals, keep budgets, etc., There are many cognitive factors that you have to consider as a dentist use. Using shapes and rotating objects in your head is what dentists do with your teeth. Using a mirror and working on an inverted tooth requires a lot of geometry (like the angles of a pool game). You must make sure that you drill with the long axis of the tooth and measure the length of the root of the tooth. Geometry plays the main role here [14].

### **Conclusions**

From the research conducted on the role of mathematics in medicine, we have come to the conclusion that mathematics is used as a powerful tool in the diagnosis and treatment of various diseases and plays a very important role in this field.

Therefore, the existence of a close relationship between a doctor and a mathematician helps to treat diseases better, and doctors can use mathematical problems to diagnose and treat diseases in a more fundamental way.

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## COMPARATIVE ANALYSIS OF THE CONSTITUTIONS OF THE COUNTRIES OF CENTRAL ASIA

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### ABSTRACT

The Constitution forms the legal basis of the country. It has the highest legal force and enshrines the rights, freedoms and duties of citizens. History clearly shows that the Constitution should not be amenable to change, as it is the core of society that ensures stability. Despite this, in today's information world, the Constitution should also be adapted to the requirements of the time. The Constitution should become the basis of reforms and the legal foundation of the Development Strategy of New Uzbekistan for 2022-2026

The purpose of this work is to conduct an in-depth analysis of the Constitutions of the countries of Central Asia in order to identify similarities and differences. The countries of Central Asia gained their independence in one year, after the collapse of the USSR, this moment is key and allows us to highlight the starting point where they started. It is interesting to study what these countries have come to over 30 years of independence in the field of constitutional law, what difficulties they have overcome; and how the experience of one country can help a neighboring one.

#### **Methodology:**

The study is based on the methods of induction and analysis. The author in this paper compares the Constitutions of the countries of Central Asia and the available factors, derives a generalization. There is a connection of the object of study. The mentality, culture and development of countries were studied, based on the synthesis method. The method of analysis was used to study the differences between the Constitutions of the countries of Central Asia.

**Keywords:** Amendments, Adaptation, Reforms, Development Strategy, Central Asia, Independence, Collapse of the USSR, Constitutional law, Comparative constitutional studies.

The Constitution is not a dogma, it is  
Should be a program for action

**Akmal Saidov**

### **KAZAKHSTAN:**

The culture and mentality of Kazakhstan was formed on three principles: primordially traditional, colonial and Western influence. The reason for this is that Kazakhstan is between European and Asian civilizations.

The economic development of Kazakhstan is explained by the fact that it is very rich in natural resources, for example, energy and mineral. According to the IMD-2021 rating, Kazakhstan ranked 35th in the competitiveness ranking. In this ranking, the efficiency of the government, business, as well as the infrastructure of Kazakhstan was highly appreciated. These statistics indicate its importance and development on the world stage.

The first Constitution of independent Kazakhstan was adopted at the IX session of the Supreme Council of Kazakhstan of the XII convocation on January 28, 1993. But this Constitution lasted only two years. This Constitution of Kazakhstan was adopted on August 30, 1995 by a nationwide referendum.

The Constitution of the Republic of Kazakhstan was written in two languages - Kazakh and Russian. The Kazakh version turned out to be longer than the Russian version in terms of the number of words due to the specifics of the translation of legal terminology and the peculiarities of the language.

During the adoption of this Constitution, more than 30 thousand collective discussions were held, where more than three million Kazakhstanis took part. After discussions, almost 30,000 proposals were submitted. In particular, more than 1,100 amendments and additions were made to fifty-five articles. Although the referendum on the adoption of the new Constitution took place on August 30, it entered into force only on September 5, 1995, after the publication of the official results of the will of the people in the newspapers Yegemen Yazaystan and Kazakhstanskaya Pravda.

Amendments and additions were made to the current Constitution four times - in 1998, 2007, 2011 and 2017. The first changes included changing the terms and powers of the President and deputies. The 2007 amendments provided that Kazakhstanis would no longer vote for a specific person, but for a specific party. In February 2011, the Constitution was amended regarding the basis for the appointment and election of the President of the country. At the same time, Nursultan Nazarbayev, the first President of Kazakhstan, received the status of "Elbasy". And in 2017, part of the powers of the President were transferred to the Parliament and the Government.

As for the composition of the Constitution of Kazakhstan, it consists of 98 articles, which are grouped into 9 sections. In the preamble, Kazakhstanis recognize themselves as civil society.

#### **Similarities with the Constitution of Uzbekistan:**

1) The Constitution of Kazakhstan states that international treaties ratified in this country take precedence over its laws. This means that Kazakhstan recognizes the international treaties that it has signed above its normative acts. This is also observed in our law. For example, the preamble to the Constitution of the Republic of Uzbekistan states that the Constitution was created recognizing the priority of universally recognized norms of international law

2) Similarities are also observed in the rules governing family relations. For example, paragraph 3 of Article 23 tells us that adult able-bodied children are obliged to take care of disabled parents. In the Constitution of Uzbekistan, such a provision is provided for in Article 66 of the Constitution of the Republic of Uzbekistan. This rule at the constitutional level consolidates our traditions regarding respect and care for the older generation.

#### **Differences with the Constitution of Uzbekistan:**

1) In paragraph 1 of Art. 2 The Republic of Kazakhstan (hereinafter RK) states that Kazakhstan is a unitary state with a presidential form of government. As for Uzbekistan, we do not have an article that would clearly indicate the structure of the state. For example, Uzbekistan is considered a unitary state with signs of a federation, but the opinions of scientists differ on this point, because of this, the territorial structure of Uzbekistan should be precisely determined. But according to the form of government, Uzbekistan is also presidential.

2) clause 3.1. Art. 2 says that within the city of Nursultan a special legal regime can be established in the financial and legal spheres. To implement this article, the constitutional law “On the Astana International Financial Center” was adopted. This NLA states that there is an international financial center in the city of Nur-Sultan, which enjoys special prestige. For example, according to Art. 4 of the law “On the Astana International Financial Center”, in the city of Nur-Sultan, along with local laws, there are norms, precedents of the law of England and Wales, because they are considered the standards of the world's leading financial centers. Another reason for the introduction of the Anglo-Saxon legal system is the creation of favorable conditions for foreign investors. Also, according to Art. 6 of this NPA, the Participants of the Center until January 1, 2066 are exempt from paying corporate income tax. This center is also distinguished by the fact that it has its own management, for





example, the Council for the Management of the Center, the court of the center, the international arbitration center. If we consider in more detail the court of this center, then it has a special legal status and resolves issues that have arisen only in this center. It has only 2 instances - first and appeal. The official language of the center is English. This was done to attract investors and turn the city of Nur-Sultan into an international financial center.

3) paragraph 3 of Art. 6 tells us that the Earth, its subsoil, water, flora and fauna, and other natural resources are state property. Land may also be privately owned.

4) In paragraph 3 of Art. 10 states that Kazakhstan does not recognize the citizenship of another state.

5) Art. 15 paragraph 2 allows for the possibility of the death penalty. It is established by law as an exceptional measure of punishment for terrorist crimes accompanied by the death of people, as well as for especially grave crimes committed in wartime.

6) According to paragraph 2 of Art. 41, A citizen of Kazakhstan by birth, not younger than forty years old, fluent in the state language, living in Kazakhstan for the last fifteen years and having a higher education may be elected President of the Republic of Kazakhstan.

7) In paragraph 5 of Art. 42 states that the same person cannot be elected President of the Republic more than twice in a row, but this restriction does not apply to the First President of the Republic of Kazakhstan, Nursultan Nazarbayev.

8) In paragraph 1 of Art. 70 provides the right of ex-Presidents of Kazakhstan to become life members of the Constitutional Council. And in Uzbekistan, the ex-President can only become a life member of the Senate.

9) In paragraph 2 of Art. 91 provides the invariable provisions of the Constitution of Kazakhstan. Examples of them: unitarity and territorial integrity, the form of government, as well as the fundamental principles of the country's activities, laid down by the Founder of independent Kazakhstan, the First President of the Republic of Kazakhstan - Elbasy.

10) In paragraph 1 of Art. 95 states that one half of the deputies of the Senate is elected for 4 years, while the other half of the deputies - for a term of two years.

### **Proposals to the Constitution of Uzbekistan:**

1) Clause 1 of Article 1 can be adopted from the Constitution of Kazakhstan. It talks about the fundamental principles of Kazakhstan's activities, namely: public harmony and political stability, economic

development, patriotism, the solution of the most important issues of public life at a republican referendum or in Parliament.

2) In paragraph 2 of Art. 7 shows that the Russian language has an official status, because of this it is used in state organizations and local governments on a par with Kazakh.

3) In paragraph 2 of Art. 19 states that everyone can use their native language and culture, can freely choose the language of communication, education, training and creativity.

4) In paragraph 2 of Art. 75 states that in some cases criminal trials are carried out with the participation of jurors

5) paragraph 3 of Art. 77 states that laws that worsen the situation of citizens, establish or increase responsibility, impose new duties do not have retroactive effect. But if, after the commission of the offense, a law was passed that mitigates or cancels liability, then a new law applies;

6) paragraph 3 of Art. 77 leads that the clergy should not testify against those who trusted them in confession. Evidence obtained illegally is not valid. No one can be condemned on the basis of his own confession alone;

#### **TURKMENISTAN:**

The culture and mentality of Turkmenistan is slightly different from other Central Asian countries. this is explained by the fact that the ancestors of the Turkmens are nomads, while the ancestors of the Uzbeks or Tajiks were sedentary. In the mentality of Turkmens, love for horses is strongly manifested. For Turkmens, a horse is a symbol of the country. It is customary to see photographs of horses in their homes, instead of family members.

Another difference of the Turkmen society is hierarchy. The order of older people must be executed immediately and without hesitation. For Turkmens, fur hats are the dignity of men. You can not tear it off the head of the owner. This is considered an insult.

The economy of Turkmenistan is distinguished by the sale and sale of a large amount of natural resources. Investors are only allowed to extract complex deposits of natural resources. The main gas exporter of Turkmenistan is Russia, because through its pipelines Turkmen gas reaches the European market.

In 2018, Turkmenistan entered the TOP-3 in terms of economic growth. And in terms of natural gas reserves, it ranks 4th in the world, and 10th in terms of production. Export of Turkmenistan is 2.2 times more than import. The main sectors of the economy are oil and gas production, agriculture, and metallurgy.

The Turkmen people are trying to create a strong welfare state. Through constitutional reforms, Turkmenistan has established free public services. For example, Turkmenistan is the only country where gas, electricity and water are provided free of charge. It should be noted that in the total amount of cash expenditures of households in Turkmenistan, expenditures on housing and communal services account for only 0.1% and are the lowest in the world.

Thanks to the constitutional reforms of 2016, Turkmenistan became the first country in the world to have the principle of neutrality recognized by the UN. The Constitution provides for non-interference in the internal affairs of other states, non-use of force, non-alignment with military blocs and associations, and promotion of peaceful relations. Thanks to the policy of neutrality, Turkmenistan consistently and purposefully implement large-scale reforms in the oil and gas, transport, construction, chemical, energy, agricultural and other sectors of the economy, as well as in the social sphere.

If we consider the composition of the Constitution of Turkmenistan, it should be noted that it consists of 8 sections and 142 articles. Unlike the Constitution of the Republic of Uzbekistan (hereinafter referred to as the RUz), not all sections are divided into chapters. Only section 3 (The system of public authorities in Turkmenistan) has 6 chapters.

The result of the constitutional reform of 2016 was that the age limit for a candidate for the presidency, which was 70 years old, was abolished. In turn, the term of office of the President was extended from 5 to 7 years.

In the same year, a section called "Economy and the financial and credit system" was added, and article 139 of this section states that the national currency of Turkmenistan is the manat, and the circulation of foreign currency in the country is regulated by a separate law. Also, these reforms reflected the main principle of Turkmenistan's foreign policy as neutrality. As a result of the constitutional reforms of 2016, 28 new articles were added, 24 of which were new, and 4 existing articles were reworded, 107 articles were changed and supplemented

On September 25, 2020, a new 9th edition of the Constitution was adopted. The text of the law "On amendments and additions to the Constitution of Turkmenistan" was published in the newspaper "Neutral Turkmenistan" dated September 26, 2020. . Then the changes affected thirty-one articles of the Constitution out of 142, where there are references to the Parliament of Turkmenistan. The name of the parliament, Mejlis, was changed to Milli Gengesh (National Council). The peculiarity of this reform was that after that the Parliament of Turkmenistan became

bicameral. The bicameral parliament began to function from January 1, 2021. The Mejlis, which had previously been a unicameral parliament, became the lower house, and the Halk Maslakhaty, which previously existed as a body separate from the Mejlis, became the upper house. It should be noted that in Uzbekistan the parliament became bicameral in 2005.

In the constitutional reform of 2020, the concept of an ex-president was introduced, who automatically receives a seat in the Halk Maslakhaty.

#### **Similarities with the Constitution of Uzbekistan:**

- Article 17 provides for political diversity and a multi-party system.
- According to Art. 71. The President of Turkmenistan is the supreme commander in chief.

#### **Differences with the Constitution of Uzbekistan:**

- Art. 10 tells us that a citizen of Turkmenistan is not recognized as a citizen of another state. This means that dual citizenship is prohibited in Turkmenistan. It is also said that a citizen of Turkmenistan cannot be extradited to another state, expelled from Turkmenistan or limited in the right to return to his homeland.
- Art. 11 guarantees the rights and freedoms of foreign citizens and stateless persons.
- According to Article 76, in Turkmenistan, the President may transfer some of his powers related to foreign policy, awarding. pardon and amnesty.
- According to Art. 91 In Turkmenistan, the head of the executive branch is the President, while in Uzbekistan this position is occupied by the Prime Minister.

#### **Proposals to the Constitution of Uzbekistan:**

- The Constitution of Turkmenistan already in the preamble guarantees the rights and freedoms of man and citizen, and also affirms the principle of permanent neutrality.
- Art. 2 states that the Resolutions of the UN General Assembly on the "Permanent Neutrality of Turkmenistan" were adopted. It also states that the permanent neutrality of Turkmenistan is the basis of its domestic and foreign policy.
- Art. 32 states that the death penalty has been abolished in Turkmenistan. Here, at the constitutional level, the people fix that they are against the death penalty.
- Turkmenistan has a separate Article 40 regulating family relations. This article establishes the right to form a family, the equality of spouses, the rights and obligations of parents in raising their children.

- Article 46 establishes equal opportunities for citizens to access public service and the right to participate in the administration of justice.
- Art. 62 speaks of the admissibility of evidence. It says here that evidence obtained in violation of the law is null and void. It also establishes the right of citizens not to testify against themselves or their relatives..
- Art. 63 states that laws that worsen the situation of a citizen do not have retroactive effect..
- According to Art. 71, the President of Turkmenistan does not have the right of suspensive veto in relation to constitutional laws on the adoption of the Constitution, amendments and additions to it.
- According to Art. 141, in Turkmenistan it is impossible to change the form of government, i. it must always remain presidential.

### **KYRGYZSTAN:**

Kyrgyzstan is a country where 65% of the territory is occupied by mountains. Kyrgyzstan is rich in natural resources, which are necessary for the development of agriculture and hydropower.

Today, Kyrgyzstan has found its place on the world stage. It is important to note that 115 countries recognize Kyrgyzstan and it has established diplomatic relations with almost 100 countries. In international relations, Kyrgyzstan achieves significant success, for example, in 2021 it ranked 93rd in the world in terms of military power. Also, the gross national income in Kyrgyzstan in 2021 reached \$1,240 and ranked 169th in the world.

The Constitution of Kyrgyzstan was adopted on May 5, 1993 at the 12th session of the Supreme Council of Kyrgyzstan. Then the Constitution consisted of 8 chapters and 97 articles. The first five amendments were made during the presidency of Askar Akayev, in 1994, 1996, 1998, 2001 and 2003. On February 10, 1996, on the basis of a referendum, a bicameral parliament, the Jogorku Kenesh, was formed, consisting of the Legislative Assembly and the People's Assembly. On October 17, 1998, private ownership of land was introduced. On December 24, 2001, the Russian language was given the status of an official language. On February 2, 2003, a new version of the Constitution was adopted. In 2006, Kyrgyzstan adopted a new Constitution, but the Constitutional Court did not recognize it and canceled it. As a result, in 2007 a referendum was held, which resulted in the following: the parliament began to be elected according to the proportional system, the President received greater rights to dismiss the government and civil servants. They also established a rule that the same candidate cannot become President twice in a row. In 2010, they adopted a new version of



the Constitution, where they imposed a ban on amendments until 2020. But still, in 2016, amendments were made to the basic law, according to which the rights of the President were limited, while the heads of government, on the contrary, were expanded.

The last amendments were made on May 5, 2021 and they became the eighty-first in a row. According to the results of the 2021 referendum, the President began to replace the Prime Minister and began to lead the executive branch. Complicated the impeachment process. The number of parliament deputies was reduced from 120 to 90. A new advisory, supervisory body, the People's Kurultai, was created, which gives directions on social development. This body is mentioned in Article 7 of the Constitution of Kyrgyzstan. The Constitutional Court was created instead of the Constitutional Chamber.

The Constitution of Kyrgyzstan consists of 5 sections, 14 chapters and 116 articles.

#### **Similarities with the Constitution of Uzbekistan:**

- Article 11 states that Kyrgyzstan does not have aggressive and military goals. In Kyrgyzstan, it is forbidden to use the armed forces to solve internal political problems.
- According to article 20, respect and care for parents is considered a sacred duty of children. Children, in turn, are the most important value of Kyrgyzstan. Also in article 21 there is a mention of their sacred tradition, to honor the elders and respect the younger.

#### **Differences with the Constitution of Uzbekistan:**

- In the preamble there is a mention of the epic of the Kyrgyz people "Manas". This work is included in the UNESCO Intangible Cultural Heritage List, as well as in the Guinness Book of Records as the largest epic in the world. The Kyrgyz revere and follow the precepts of Manas the Magnanimous, the protagonist of this epic.
- Article 1 states that Kyrgyzstan is an independent, sovereign democratic, unitary, legal, secular and social state. While the Constitution of Uzbekistan states only that Uzbekistan is a sovereign democratic republic.
- The Constitution itself, in Article 23, states that human rights and freedoms can be limited to protect national security, public order and in wartime.
- Article 29 states that no one may be prosecuted for disseminating information that discredits or degrades the honor and dignity of a person.
- Article 73 states that the President can be prosecuted after being removed from power for violating the Constitution and



for interfering in the affairs of the Jogorku Kenesh, as well as the court.

- Article 85 of the Constitution establishes that the legislative initiative belongs to 10,000 voters as a people's initiative and they are mentioned in the same row as such subjects as the President and the Prosecutor General.

- Article 92 states that the resignation of the Chairman of the Cabinet of Ministers does not entail the resignation of the entire Cabinet of Ministers. And in the Constitution of Uzbekistan, Article 98 states that in the event of dismissal of the Prime Minister, the entire Cabinet of Ministers resigns.

### **Proposals to the Constitution of Uzbekistan:**

- Article 5, paragraph 2 states that the usurpation of power, that is, its seizure, is a particularly serious crime.

- According to Article 13, the Russian language also enjoys the status of an official language.

- Article 25 clearly states that the death penalty is prohibited.

- The Kyrgyz Republic has established the principle of ensuring the best interests of the child, which is included in Article 27 of the Constitution. This principle is established in accordance with the Convention on the Rights of the Child. For example, this principle states that due consideration should be given to the views of the child. We must ensure the survival and healthy development of the child to the maximum extent possible.

- The ban on forced labor, exploitation of child labor, human trafficking and slavery is approved at the constitutional level and is included in Article 28 of the Constitution.

- Article 42 of the Constitution establishes the right of citizens to strike. This right comes from the International Covenant on Economic, Social and Cultural Rights, and Kyrgyzstan acceded to it on January 12, 1994

- Paragraph 2 of Article 51 allowed dual citizenship. A citizen of Kyrgyzstan who has acquired citizenship of another country receives the status of a compatriot with foreign citizenship. He is granted the right to visa-free entry and exit to his homeland, employment without a permit, temporary residence and education, it will be possible to use the services of medical institutions, and such a person is issued a Meken Card for 10 years.

- Paragraph 5, Article 59 refers to the provisions of the Miranda Act. It says that the detainee must be told the reasons for his detention, as well as explain his rights.

- Article 60 establishes that a law that aggravates a person's liability does not have retroactive effect. It is also

mentioned here that the criminal law by analogy does not apply, because the analogy of the criminal law contradicts the requirements of the principle of legality, allowing derogation from it in practice. Such a norm is also established in the Constitution of Kazakhstan.

- According to Article 115, citizens are allowed to establish aksakal courts. They specialize in handling cases to reconcile the parties.

### **TAJIKISTAN:**

Tajikistan is one of the states with a developed culture and mentality. The Tajik mentality is characterized by humanism and collectivism. Tajiks are distinguished by hospitality and tolerance, expressed by the requirements of the Islamic religion, which educates a person in a spirit of respect for the opinions and positions of others. The culture and traditions of the Tajik people are also manifested in lawmaking, examples of which are such laws as “On the regulation of traditions and customs”, “On the responsibility of parents for raising children”. They are aimed at protecting the traditions and customs of the Tajik people.

When we consider the economy of Tajikistan, it should be noted that 93% of the country's territory is in the mountains. Because of this factor, Tajikistan is rich in mineral resources, more than 400 deposits have been explored, about 100 of them are being exploited, 40 types of minerals are mined. The economy is based on industry and agriculture. Tajikistan's external debt is decreasing, due to the fact that the country's gold reserves increased 60 times over 15 years from 2000 to 2015.

Tajikistan has an important place in the international arena, it has been recognized by 151 countries, the country has established diplomatic relations with 126 of them, has become a member of 51 organizations. The experience of the Tajik people in establishing peace and national accord, gained as a result of the civil war, is recognized by the world community. Tajikistan has an open door policy.

In terms of development, Tajikistan has made progress in reducing poverty and developing the economy. Between 2009 and 2019, the poverty rate fell from 83% to 26.3% of the population, and economic growth averaged 7% per year. Thanks to the national development strategy for the period up to 2030, adopted in Tajikistan, it is planned to increase the income of the population by 3.5 times by 2030 and reduce the level of poverty by half. Tajik President Emomali Rakhion noted that the share of the private sector in the economy was 70% of GDP. Tajikistan has established diplomatic relations with 160 states and has become a member of 51 international organizations. The Constitution of Tajikistan is not divided into sections, consists of 10 chapters and 100 articles, as well as a transitional provision. It was adopted by referendum on November 6, 1994.



At that time, a civil war was taking place in Tajikistan. The draft Constitution was created by two commissions. The first draft of the Constitution was published for discussion in April 1992, in the newspaper "Jumhuriyat". This project was prepared by the second working group under the leadership of Nurullo Khuvaidulloev, who at that time held the position of the Prosecutor General. In 1993, work continued on the creation of the Constitution. Two versions of the Constitution were drawn up - one for the Presidential Republic, and the other for the Parliamentary Republic. It is worth noting the participation of the people in the creation of the Constitution. As a result of the discussion of the draft Constitution, more than 7 thousand proposals were received from the people.

The Constitution of Tajikistan has undergone a number of changes. For example, since independence, 3 amendments have been made to the Constitution of Tajikistan, in 1999, 2003 and 2016. The result of the referendum in 1999 was the permission to register religious political parties. This was a condition of the peace agreement and ended the 1992–1997 civil war in Tajikistan. The term of office of the President was also extended to 7 years, but in one term. A significant result of the 1999 referendum is the creation of a bicameral Parliament, the Majlisi Oli. Now the Parliament of Tajikistan consists of the chambers of the Majlisi Milli and the Majlisi Namoyandagon. At the 2003 referendum, 56 amendments were considered, the main among them is the extension of the Presidential term for 7 years, but already for two terms.

In the 2016 referendum, the people were limited in their choice. An example is that people could only answer “yes” or “no” and voted on all 50 amendments at once. This referendum considered the possibility of Emomali Rahmon being re-elected an unlimited number of times. They also reduced the age limit for a presidential candidate from 35 to 30 years. They introduced a ban on the creation of parties of a religious and atheistic nature.

#### **Similarities to the Constitution of Uzbekistan:**

- Tajikistan is another Central Asian country with an autonomous territory. The country consists of the Gorno-Badakhshan Autonomous Oblast and other regions, according to Article 7.
- According to Article 49, every ex-President of Tajikistan becomes a member of the Majlisi Milli for life, unless he renounces this right.
- Article 53 tells us that the representative of the Gorno-Badakhshan Autonomous Region is one of the Deputy Chairmen of the Majlisi Milli.

- In accordance with Article 78, Tajikistan has a self-government body in the township and village, which is called Jamoat.

#### **Differences with the Constitution of Uzbekistan:**

- Dual citizenship is not allowed in Tajikistan, as Article 15 of the Constitution states that citizens of Tajikistan cannot be citizens of another state.
- According to Article 64, the President of Tajikistan is both the head of state and the head of the executive branch.
- Article 65 observes the possibility for the Leader of the Nation, Emomali Rahmon, to run for President more than twice in a row, but at that time it is generally prohibited.

#### **Proposals to the Constitution of Uzbekistan:**

- Article 1 of the Constitution of Tajikistan states that Tajikistan is a social state that creates conditions that ensure a decent life and free development of a person.
- Article 2 establishes the status of the Russian language as the language of interethnic communication.
- Article 11 establishes that Tajikistan can be a member of commonwealths, international organizations, and also cooperates with foreign compatriots.
- Article 46 clearly spells out the conditions for declaring a state of emergency. According to this article, a state of emergency is declared when there is a threat to human rights, the independence of the country and its territorial integrity, as well as due to disasters. It is established that the state of emergency is 3 months and then it can be extended.
- In accordance with Article 51, a free deputy mandate is established in Tajikistan. For example, a member of the Majlisi Milli and a deputy of the Majlisi Namoyandagon does not depend on the will of the voters, can freely express his opinion and vote according to his conviction.
- Article 100 of the Constitution establishes constitutional norms that are not subject to change. This is a republican form of government, territorial integrity, as well as the democratic, legal, secular and social essence of the state.

#### **Conclusion:**

Based on the foregoing, we can conclude that the Constitutions of the countries of Central Asia have much in common, but at the same time, there are differences.

Some constitutional norms can be introduced into the Constitution of Uzbekistan to improve it. Examples of such norms are: based on the experience of Kazakhstan, it is possible to introduce a special financial and legal position in the capital to turn it into an

international business center, which will help attract foreign capital. It is possible to give the Russian language the status of an international or official language. Having studied the experience of Turkmenistan, it is possible to apply the principle of permanent neutrality. It is possible to adopt the experience of Kyrgyzstan in implementing the principle of ensuring the best interests of the child. On the basis of the international pact on economic, social and cultural rights, the right to strike can be introduced into the Constitution. On the example of Kyrgyzstan, some norms from the Miranda law can be introduced. In order for the Constitution to be the pillar of society and the foundation of development, it must meet the requirements of the time and change. This can be confirmed by the words of **Winston Churchill that “To become better means to change, to be the best of the best means to change constantly.”**

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## OPTIK ALOQA LINIYALARINING OPTIK TOLA BUKILISHIDAGI YO'QOTISHLAR TAHLILI

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### ANNOTATSIYA

Ushbu ishda optik aloqa liniyalarida qo'llaniladigan optik tola bukilishdagi yo'qotishlar va optik tola materialining nobirjinsliklarida sodir bo'ladigan sochilish tufayli yuzaga keladigan yo'qotishlar ko'rildi. Bunda asosan sochilishdagi, makro va mikro bukilishlardagi yo'qotishlar va Optik aloqa liniyalarida toladagi yo'qotishlar turlari buning sababi ularni kelib chiqishi ko'rib chiqildi. Maqolada optik tola, makro va mikro bukulishlar, yutilish va sochilishdagi yo'qotishlar aniqlandi.

**Kalit so'zlar:** Optik tola, makro va mikro bukilishlar, so'nish, sochilish.

### ABSTRACT

In this work, bending losses of an optical fiber used in optical communication lines and scattering losses caused by inhomogeneities of the optical fiber material were observed. At the same time, the types of scattering losses, macro- and microbends and fiber losses in optical communication lines and their causes were mainly considered. The article defines optical fiber, macro- and microbends, absorption and scattering losses.

**Keywords:** Optical fiber, macro and micro bends, fading, scattering.

### KIRISH

Aloqa sohasida optik tolalardan foydalanish, aloqaning xavfsizligi va katta tezlikda ma'lumot almashish imkoniyatini beradi. Optik aloqa liniyalarida qo'llaniladigan bir modali va ko'p modali optik tolalar mavjud. Optik tola bir qancha avzalliklari bilan aloqa

sohasida qo'llash qulaydir. Optik tola karroziyaga uchramaydi, tolaning xizmat ko'rsatish muddati 25 yildan oshiq va xavsizlik darajasi yuqori bo'lgan kabel turidir. Optik tolaning avzalliklari bo'lganimkabi uning ayrim kamchiliklari ham mavjud. Bu kamchiliklaridan biri optik tolada signal yo'qotilishidir. Optik tolada yo'qotishlar turlicha bo'ladi. Biz bu maqolamizda optik tola bukilishidagi yo'qotishlar va sochilishdagi yo'qotishlarni ko'rib chiqamiz. Ma'lumki, optik tolalar shisha yoki plastmassadan tayyorlanadi. Yorug'lik tolaning o'rtasi bo'ylab bir uchidan ikkinchisiga uzatiladi va signal beriladi. [1]

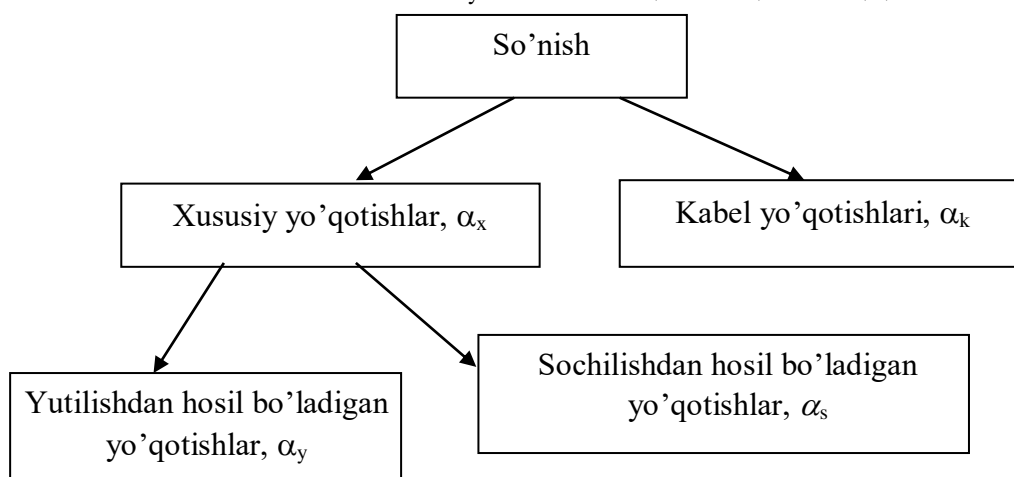
Optik aloqa liniyasida optik signal tola orqali uzatilganda yorug'lik to'lqinlarini tola muhiti bilan chiziqli va nochiziqli o'zaro ta'siri natijasida signal quvvatini yo'qolishidan optik signal so'nishi hosil bo'ladi. Umumiy holda so'nish signallarni sochilishi va yutilishidan hosil bo'luvchi yo'qotishlar va kabel yo'qotishlaridan yuzaga keladi.

### ADABIYOTLAR TAHLILI VA METODOLOGIYA

Yutilish va sochilishdan hosil bo'ladigan yo'qotishlar xususiy yo'qotishlar, kabel yo'qotishlari esa qo'shimcha yo'qotishlar deyiladi. (1-rasm).

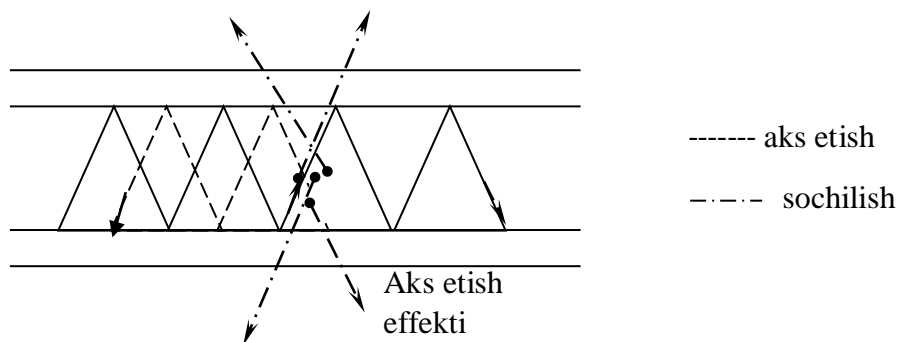
Optik aloqa liniyasida optik tola yo'qotishlarini to'lqinlarning yig'indisi ko'rinishida yozishimiz mumkin (1-formula):

$$\alpha = \alpha_x + \alpha_k = \alpha_y + \alpha_s + \alpha_k, \text{ (dB/km)}. \quad (1)$$



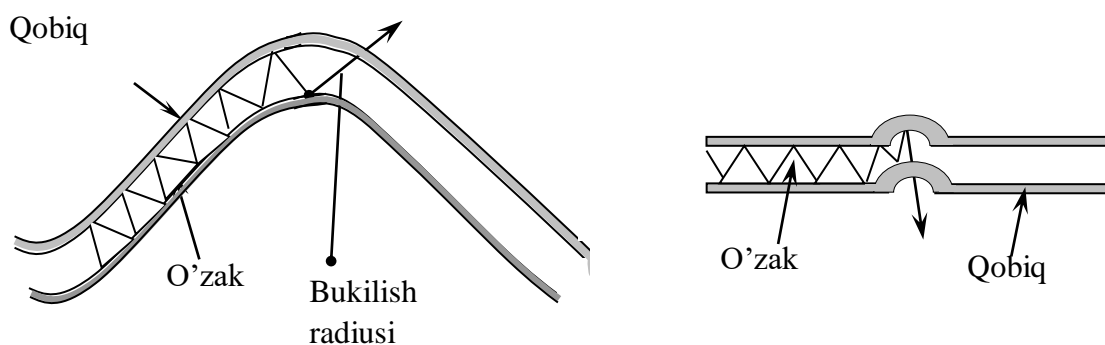
1-rasm. Toladagi yo'qotishlarning asosiy turlari

1550 nm to'lqin uzunligida Releevsk sochilishlari umumiy yo'qotishlarning asosiysi hisoblanadi. Releevsk sochilishi to'lqin uzunligiga teskari proporsional bo'lib, to'lqin uzunligi oshishi bilan yo'qotishlar kamayadi. (2-rasm.)



2-rasm. Optik tolada yorug'likning sochilishi va aks etilishi.

Optik tolada mikrobukilishdagi yo'qotishlar tolani ishlab chiqarish jarayonida yuzaga keladi. Bu mikrobukilishlar optik tolada yo'qotishlarni oshiradi va 80-100 dB/km dan ham oshishi mumkin. (3.a-rasm). Makrobukilishlar optik tolada ruxsat etilgan radiusdan oshgan katta bukilishlarga aytiladi. Optik tolani ruxsat etilgan radiusdan ko'p bukish optik impluslarni tola qobig'i orqali sochilishiga olib keladi. (3.b-rasm).



3-rasm. Optik tolada makrobukilish (a) va mikrobukilish (b).

Mikrobukilishlarning so'nishi quyidagi formula bilan aniqlanadi (2-formula):

$$\alpha_{mikro} = N * \frac{32 * h^2 * d^4 * n_1^2}{D^6 * NA^6} \quad (2)$$

N - tolada km masofa uchun mikrobukilishlar soni.

h - Mikrobukilishning (radiusi), [mkm];

d - optik tola o'zagining diametri, [mkm];

$n_1$  - optik tola o'zagi sinishi indeksi;

D- optik tola qobig'ining diametri, [mkm];

NA - bu raqamli apertura.

Makrobukilishlar tufayli yo'qotilishning oshishi quyidagi formula bilan aniqlanadi (3-formula):

$$\alpha_{makro} = -10 \lg \left( 1 - \frac{d \cdot n_1}{R \cdot NA^2} \right) \quad (3)$$

R – makrobukilishning radiusi;

d – optik tola o'zagining diametri, [mkm];

n1 - optik tola o'zagi sinishi indeksi;

NA - bu raqamli apertura.

Optik tolada bukilish radiusi maksimal bukilish radiusidan ko'p bo'lsa, tolada yo'qotishlar ko'proq kuzatiladi.

Xorazm viloyati Urganch shahar optik aloqa liniyalarida optik tola bukilishidagi sochilishlar, makro va mikro bukilishidagi yo'qotishlar qaraldi. Bunda Urganch shahridan 11,3 va 8 km uzunlikdagi va Xiva-Urganch-Gurlan 72 km uzunlikdagi optik aloqa liniyasidagi yo'qotishlar aniqlandi:

1. Mikrobukilishlar;

2. Makrobukilishlar.

Mikrobukilishdagi yo'qotishlarni 2-formula yordamida hisoblab olamiz.

Optik liniya uzunligi 11,3 km uchun:

$$\begin{aligned} \alpha_{mikro} &= N * \frac{32 * h^2 * d^4 * n_1^2}{D^6 * NA^6} = \\ &= 90,4 * \left( \frac{32 * (0,02 * 9 * 10^{-6})^2 * (9 * 10^{-6})^2 * 1,2^2}{(125 * 10^{-6})^6 * 0,113^6} \right) = 7,8 * 10^{-4} \frac{dB}{km} \end{aligned}$$

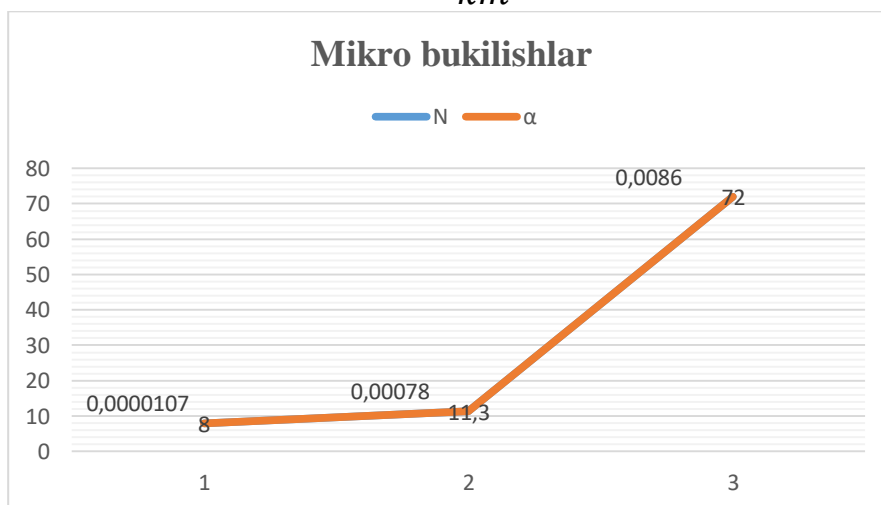
Optik liniya uzunligi 8 km uchun:

$$\begin{aligned} \alpha_{mikro} &= N * \frac{32 * h^2 * d^4 * n_1^2}{D^6 * NA^6} = \\ &= 64 * \left( \frac{32 * (0,02 * 9 * 10^{-6})^2 * (9 * 10^{-6})^2 * 1,2^2}{(125 * 10^{-6})^6 * 0,113^6} \right) = 1,07 * 10^{-4} \frac{dB}{km} \end{aligned}$$

Optik liniya uzunligi 72 km uchun:

$$\begin{aligned} \alpha_{mikro} &= N * \frac{32 * h^2 * d^4 * n_1^2}{D^6 * NA^6} = \\ &= 720 * \left( \frac{32 * (0,02 * 9 * 10^{-6})^2 * (9 * 10^{-6})^2 * 1,2^2}{(125 * 10^{-6})^6 * 0,113^6} \right) = \end{aligned}$$

$$= 8,6 * 10^{-3} \frac{dB}{km}$$



**1-grafik. Mikro bukilishlar natijalari**

Makrobukilishdagi yo'qotishlarni 3-formula yordamida hisoblab olamiz. Bunda R-makrobukilishning radiusi o'zgargan sayin yo'qotishlar oshib boradi.

$$\alpha_{makro} = -10 \lg \left( 1 - \frac{d * n_1}{R * NA^2} \right) =$$

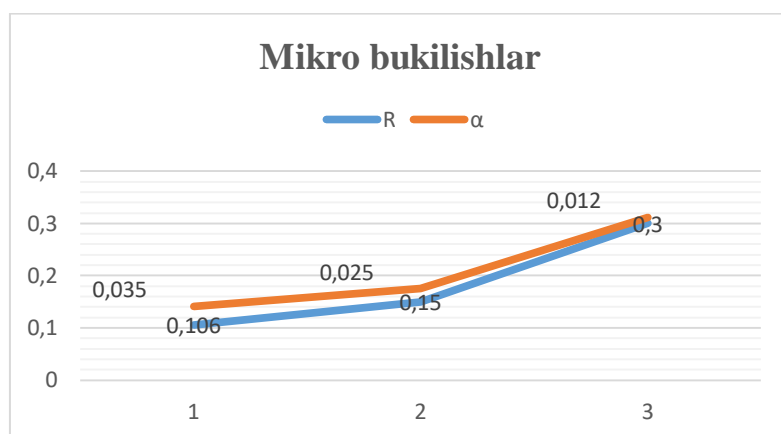
$$= -10 \lg \left( \left| 1 - \frac{9 * 10^{-6} * 1,2}{0,106 * 1,113^2} \right| \right) = 0,035 \text{ dB/km}$$

$$\alpha_{makro} = -10 \lg \left( 1 - \frac{d * n_1}{R * NA^2} \right) =$$

$$= -10 \lg \left( \left| 1 - \frac{9 * 10^{-6} * 1,2}{0,15 * 1,113^2} \right| \right) = 0,025 \text{ dB/km}$$

$$\alpha_{makro} = -10 \lg \left( 1 - \frac{d * n_1}{R * NA^2} \right) =$$

$$= -10 \lg \left( \left| 1 - \frac{9 * 10^{-6} * 1,2}{0,30 * 1,113^2} \right| \right) = 0,012 \text{ dB/km}$$



**2-grafik. Makro bukilishlar natijalari.**



## XULOSA

Optik aloqa liniyalarida makro va mikro bukilishdagi yo'qotishlar natijalari olindi. Mikro bukilishlar ishlab chiqarish jarayonida o'zak qobiqning o'q markazida joylashmaganligi sababli yuzaga keladi. Makro bukilishlar tufayli vujudga keladigan yo'qotishlar bukish radiusi oshgani sabab bo'ladi. Optik tolada payvaddashda yo'qotishlarga olib keladigan sabablar quyidagilar:

- Tola o'zagini o'lchamlarini moslashmaganligi;
- Tolani sindirish ko'rsatkichi farqlanishi;
- Tolalarni ulashda uzunasiga o'qlarni birlashmasligi;
- Tolalarni burchak aperturalarini farqlanishi;
- Tolalarni zich ulamaslikdan havo puffakchalarinihosil bo'lishi.

Yuqorida aytib o'tilgan sabablarning hammasi optik aloqa liniyalarida so'nishni, yo'qotishlarni oshiradi. Tolada yo'qotishlarni kamaytirish uchun ishlab chiqarish jarayonida o'zak qobiqning o'rtasida joylashishi, o'zak diametri bir xil bo'lishi, tolani yotqizish jarayonida makrobukilishlarga va payvandlash vaqtida yuqorida aytib o'tilgan sabablarga katta e'tibor berish zarur. Buning natijasida optik aloqa liniyasidagi optik tolada yo'qotishlar va so'nishlarni kamaytirishga erishamiz.

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## EFFECTS OF TEACHER AND STUDENT RELATIONSHIPS TO ENHANCE THE LEARNING PROCESS

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### ABSTRACT

Teacher-student relationships are the keys to the success of both teachers and students. As part of classroom management, such relationships are the most important factors in determining whether teachers work as successfully. The influence of teachers' behavior plays an important role in the academic achievement of students. Generally, teachers react by using praise, acceptance, remediation, or criticism, in responding to the students. The relationships between teachers and students in the classroom are the main point to improve the learning process. By having good relationships with students, teachers can offer the chances to students to be motivated and feel engaged in the learning process.

**Keywords:** Effects of Teacher, Student, Relationships, Enhance, Learning Process

### Introduction

Teachers' beliefs are important for understating and improving the educational process. Also, this sense of caring and supporting that teacher motivates students to become more interested learners. Students are motivated when their teachers create a safe and trustful environment. Moreover, the methods and strategies teachers use, makes students feel engaged and stimulated to participate in the learning process. The students think that a positive relationship with their teachers positively impacts their interest and motivation in school or university which contributes to the enhancement of the learning process. That behavior can be observed as any action of an organism that changes its relationship to its environment. The meaning of behavior is to conduct or carry oneself or behavior in what we do, especially in response to outside stimuli.

### The Goal of Research Article

The main goal of writing this article is to find the answers to the following questions;

1. What are the roles of teacher's relationships on students learning?



2. What are the advantages and disadvantages of teacher's relationships with students?

### **The Importance of Research**

The article “**Effects of Teacher and Student Relationships to Enhance the Learning Process**” mostly focuses on teachers' behavior on students learning. As well as, this article gives a clue for teachers how to choose reliable task in order to have a good teaching. The influence of teacher's behavior plays an important role in the academic achievement of students. A teacher has to display exceptional empathy, persistence, diligence, sincerity, research orientation, honesty and flexibility as a person. Teachers also need to be thoughtful in the way in which they react to students' comments. Generally, teachers react by using praise, acceptance, remediation, or criticism in responding to students (Akram, 2019). After reading this article the readers may be aware of the effectiveness (advantages and disadvantages) of teachers' behavior in the teaching and learning process. In addition, the aim of teachers and students relationships is construct knowledge together. As well as, the researcher are trying to know why the teachers have good behavior and relationships with students in learning process. The researcher may understand the effects of positive behavior and relationship in his/her daily life.

### **Research Methodology**

This research article is a library research. So, the author of this paper tried to gather and use the resources from the libraries and E-Sources. This paper intended to present the most important points on which teachers react positively with students. It is mentionable that, the data which is conducted in this study have been collected from academic and trustworthy books, academic journals, electronic libraries, internet sites and other scientific resources to find valuable and crucial information about “Effects of Teacher and Student Relationships to Enhance the Learning Process”. In the current study the author have tried to state some approaches, methods, and techniques, in which by using the mentioned points, inexperienced teachers who are eagerly willing to hold their students with them in order to enhance their language teaching and learning.

### **Literature Review**

#### **Teacher and Students Relationship**

According to Kirst and Kelly (1995), the relationship between teacher and student has been a focus of inquiry for over



2000 years, since Plato, Socrates, and Confucius established many of the philosophical guidelines for teaching. By emphasizing the acquisition of knowledge through dialogue, each philosopher stressed a commitment to the teacher-student relationship. The 20th century has witnessed the proliferation of ideas fostering teacher-student relationships. In the early 1900s, John Dewey and other progressive educators theorized that children flourish if allowed to grow freely in their own way at their own rate without being forced or limited by too much teaching. Maria Montessori similarly argued that children should discover knowledge for themselves and learn by doing with a clear emphasis on sensory perceptions. Learning theory defined teachers as transmitters of knowledge and students as passive recipients.

The relationship between teacher and student was redefined with the advent of cognitive psychology. Following the principles of constructivism, teachers and students were said to construct knowledge jointly. Teachers and students were believed to constitute a community of learners that engages in social discourse and produces common understandings. Teachers were seen as facilitators who guide and enrich children's learning activities, with students serving as co-contributors to the learning process.

Psychologists have recently addressed the psychosocial dimensions of teachers' relationships with students. Research on resilience indicates that caring teachers who express concern for students and act as confidants, role models, and mentors can contribute to children's capacity to overcome personal vulnerabilities and environmental adversities (Koplow, 2002). Focusing on the psychosocial aspects of teaching is especially important with older children. Close, caring relationships with teachers facilitate children's successful transition from elementary entry to junior high school. Unfortunately, while teachers are relatively well-connected with elementary-aged children, as children get older, teachers have less close contact with them and fewer resources are available to promote healthy development of the teacher-student relationships.

### **The Roles of Teachers in the Learning Process**

As Macpherson (2007) mentioned that, in teaching and learning work, the teacher has a rather important role in creating the sciences that are taught to be accepted by existing students. Not only does it play a role in educating the sciences, but there also is not little role for the teacher in the learning process. Well, this time will be discussed further about the role of the teacher in the process of teaching and learning activities. The aim of this research is to investigate how to support the



relationship between teachers and students in the classroom to improve the learning process. By having good relationship with students, teachers can offer students' chances to be motivated and feel engaged in the learning process.

Additionally, As Mazer (2012) stated that, teachers' beliefs are important for understating and improving the educational process. They closely guide language teachers to adopt their teaching strategies for coping with their daily language teaching challenges, influence their general wellbeing and in turn, shape language learners learning environment, their motivation and their language achievement and ability. The first part clarifies the concept part of teacher's beliefs. The second part illustrates three essential teaches belief about learners, learning and teacher themselves and their role in the language teaching learning process, the third is the conclusion which is consistent with the concept of teacher's beliefs.

### **Teacher as Educator**

According to Mazer (2013), teachers are educators, leaders, role models and identifications for the students in their students and their environment. Therefore, indeed a teacher must have specific standards and qualities that must be met. As a teacher, it is mandatory to have a sense of responsibility, independence, authority, and discipline that can be used as examples for students. This sense of caring and supporting from teachers motivates students to become a more interested learner. Students benefit and are motivated when their teachers create a safe and trustful environment. And also, the methods and strategies teachers use, makes students feel engaged and stimulated to participate in the learning process. The students have in their mind that a positive relationship with their teachers positively impacts their interest and motivation in school which contributes to the enhancement of the learning process. The definition of a teacher is "that teaches; especially: one whose occupation is to instruct, while an educator is defined as a person who gives intellectual, moral, and social instructions. An educator is responsible for teaching students and contributes to their learning development.

### **Teacher as Teacher**

As Murray, Christopher, Robert and Pianta (2009) have proposed that, training learning activities will be provoked by various factors in it, ranging from maturity, motivation, relationships between students and teachers, the level of freedom, verbal skills, teaching skills in communication, and security. If this factor can be fulfilled, the work of learning to train can be carried out well. The teacher must be able to create something clear to the students, and even skilled to solve various problems. Students will be engaged actively in the learning instead of being passive learners. They

have to make sure that students understand what is being taught to them in the classroom or in online teaching or in learning setup. Olsen and Kagan (1992) added that, broadly speaking, the function of teachers is to help students learn by imparting knowledge to them and by setting up a situation in which students can and will learn effectively. But teachers fill a complex set of roles, which vary from one society to another and from one educational level to another. Some of these roles are performed in the school, some in the community

### **Teachers as Learning Resource**

As Pianta (1999) said that, the role of the teacher as a learning resource will be much related to the skills of the teacher to master the existing training material. So, when students ask something, the teacher can swiftly and responsively reply to student questions by using language that is easier to understand. It refers to teaching and learning materials. To ensure that students are fully engaged in their learning, teachers employ a variety of interesting and fascinating tools to teach the ideas described in the curriculum. Such source or materials can help students turn learning experience into reality to make learning more fun, engaging, and interactive. These resources can be used by teachers as well as the students to gain more knowledge on a particular topic. These days the options for learning materials or resources are vast. Not limited to only books or classrooms. Students can seek to learn from various online sources available like videos, etc.

### **Teacher as Facilitator**

According to Pajares (1992), the role of a teacher as a facilitator is in submitting services so students can quickly receive and know the subject matter. So, that later the learning process will become more effective and efficient. Also, the teacher facilitator provides an educational atmosphere where students have an opportunity to fulfill their potencies for intellectual, emotional, physical and physiological growth evaluates the needs and abilities of students and determines methods and techniques to best present and provide instruction. As a facilitator, the teachers' job is to support every student to do their best thinking and practice. As a facilitator, the teachers encourage the full participation of students, promote mutual understanding, and cultivate shared responsibility among students.

### **Teachers as Counselors**

As Peregoy and Boyle (2013) have stated that, the teacher can be mentioned as a travel guide, which is based on his knowledge and experience and has a sense of responsibility in the smooth running of the journey. This journey is not only physical but also a more residential and deeper mental, creative, moral, emotional and spiritual journey.

The qualities analysis of the answers followed to identify the expects that represent the content of counseling activity and school orientation to differentiate those aspects that were followed consisted in identifying problems that are most in common counseling activity.

### **Teacher as Demonstrator**

Furthermore, Riahipour, Ketabi and Dabbaghi (2014) have mentioned that, the teacher has a role as a demonstrator is to have a role which can indicate attitudes that can inspire students to do the same things can be even better. So, teacher as demonstrator may appear to be a simple teaching strategy. However, the teacher plays a crucial role in involving students and maximizing what they learn from it. Teacher demonstrations are important because they: provide students with experiences of real events, phenomena and process, helping them learn. You will want teaching demonstration to reinforce whatever you have said about your teaching in your application materials. For example, if you have said that create student-centered classrooms and provide students opportunities to actively learn, do not lecture for the entire time during your demonstration. A successful teaching demonstration ultimately comes down to carefully planning and practicing.

### **The Teacher as Manager**

According to Richard (2006), in the process of teaching and learning work, the teacher has a role in holding control of the climate contained in the state of the learning process. It can be likened if the teacher becomes the captain who holds the steering wheel and takes the boat on a comfortable and safe journey. A teacher must be able to make the atmosphere of the learning room conducive and comfortable. Classroom management is the linchpin that makes teaching and learning achievable in the teaching learning process. It is the teacher who plays the main role in planning, organizing procedures and resources, arranging the environment to maximize efficiency, and monitoring students' progress anticipating potential problems.

### **Teacher as Advisor**

As Richard (1990) said that, the teacher has the role of being an advisor to his students as well as to the parents, even though the teacher does not have specialized training to be an advisor. Students will always be faced with the need to decide, and in the process, it requires teacher help. For the teacher to know well his role as an advisor and a more profound belief person, the teacher should examine the psychology of personality. A teacher adviser system means a system where an individual professional educator in school assists a small group of students and their parents or guardians



throughout the student's high school careers. Like a teacher an advisor must be a listener, and a communicator, they must care about the student's future, and they must teach a student the hard facts of what discipline, responsibility, and focus is for a student with dreams and goals.

### **Teacher as an Innovator**

According to Richards and Rodgers (2011), the teacher translates empirically in the future into a more meaningful life for his students. Because the age of the teacher and student is probably too far away, then surely the teacher has more experience than the students. The teacher's job is to translate valuable empirical and intelligence into more sophisticated languages which students can accept. Teachers are also responsible for instilling innovative thinking in the children they teach. The international recognizes the critical role that teachers play in helping children explore, experiment, and discover the world around them so they can generate new ideas and better solution to problems. The qualities of innovative educators cultivate unique educational and life experience. They cultivate professional knowledge and skills. They are confident, yet aware of what they don't know.

### **Teachers as Motivators**

As Akram (2019) stated that, the process of learning work will be successful if the students inside are highly motivated. The teacher has a crucial role in growing motivation and motivation in students in learning. Teacher motivation has always played a very significant role in the success of an individual. The role of motivation acquires more meaning and importance for a growing child who is learning the art of climbing a ladder. A teacher, needless to say, plays a very vital role in this process as she can make or mar the child if she is not able to provide necessary help and direction. A well-motivated child always learns utilize his potential to the optimum by constantly working on his strengths. The success of a child depends, to large extent, on the role a teacher plays in his formative years.

We have always heard that a teacher plays key role in developing the personality of child. When the child comes to school, he is like a blank slate and his personality, his attitude, his way of thinking and ultimately what he does in his life, all depend on how he has been dealt with or trained at school he attends in his young year. It is probably because of this reason that the school and the teacher play a vital role in shaping personality of a child. Motivation is greatest when there are objective goals by which children can measure and monitor accomplishment.

### **Teacher as Coach**

As Kirst and Kelly (1995) have mentioned that, the process of education and learning certainly requires skills lessons, whether it's intellectual or motoric. In this matter, the teacher will act as a trainer to develop these skills. This is emphasized in the 2004 curriculum which has a competency basis. Without the lessons, surely a teacher will not be able to indicate mastery of basic competencies and not be proficient in skills that match the standard lessons. In short, a teacher who coaches focuses on facilitating learning and development. The goal is to help students improve their own performance. As a result, the classroom is more flexible and open than the more traditional model.

### **Teachers as Elevator**

As Koplow (2002) mentioned that, after the learning process takes place, surely a teacher must assess the results that have been carried out during the learning work. This evaluation is not merely to evaluate the success of students to reach goals in teaching and learning work. But it also becomes an evaluation of the success of the teacher in the implementation of teaching and learning work. Now that is the role of the teacher in the learning process that you need to know. Because his character is quite important and influential, it is not wrong if the teacher is known as the Hero of Service. So, we respect and glorify existing teachers.

### **Conclusion**

As researcher worked on this research paper and we have learned that teacher's positive relationship effects on students learning. By having good relationship with students, teachers can offer students' chances to be motivated and feel engaged in the learning process. Students will be engaged actively in the learning instead of being passive learners. Also, the researcher learned that using communicative approach and cooperative learning strategies while teaching does affect and improve students' learning performance. It is mentionable that teachers and students value a supportive and caring relationship between them and that interaction is essential to the teacher-student relationship. This sense of caring and supporting from teachers motivates students to become a more interested learner. And also, the methods and strategies teachers use, makes students feel engaged and stimulated to participate in the learning process. The students have in their mind that a positive relationship with their teachers positively impacts their interest and motivation in school which contributes to the enhancement of the learning process.

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## BIOSYNTHESIS, CHARACTERIZATION AND ANTIBACTERIAL PROPERTIES OF ZNO NANOPARTICLES OF COLD TOLERANT *MICROBACTERIUM* SP.

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### ABSTRACT

Nanotechnology has attracted a great interest in recent years due to its unexpected impact on many areas of science and life, especially in biology and biomedicine. Nanoparticles due to the unique physical, chemical, optical, electronical, and magnetic properties have led to an increasing interest in their synthesis. They have been synthesized by various physical and chemical processes; but most of these methods require vast amount of energy or cannot avoid the formation of toxic byproducts in their synthesis process. Therefore, there is an urgent need to develop green processes for nanoparticle synthesis. Such as biological synthesis of nanoparticles by bacteria have been considered. In this study zinc oxide nanoparticles were biosynthesis by using microbial culture supernatant from the cold-tolerant strain of *Microbacterium* sp. OSNP13. The Biosynthesized nanoparticles were characterized by UV-Vis, DLS and XRD analysis. The results indicated that the average size of zinc oxide nanoparticles were 59.16 nm. The antibacterial activity of the produced nanoparticles was then evaluated. The MIC of zinc oxide nanoparticles for *E. coli* and *S. aureus* was also calculated to be 500 µg/ml. The zinc oxide nanoparticles produced in this study have shown good antimicrobial properties and can be suitable candidates for use as antimicrobial agents.

**Keywords:** Cold-tolerant *Microbacterium* sp, ZnONPs, Antibacterial activity.

### 1. Introduction

Nanotechnology is a field of technology in which humans can design different types of compounds, alloys, devices and tools



and in general, various systems and structures or factors in atomic and molecular scale and nanometer dimensions and bring them to the manufacturing stage. Antibiotics are widely used in health care as a result, pathogens are turning into antibiotic-resistant microbes and becoming a serious disease for human health. In the last decades, scientists all over the world have been looking for new antimicrobial agents with increased ability (Hu et al., 2010; Li et al., 2015). To meet the ever-increasing demand for more effective antibacterial agents, several nanomaterials have been developed. However, many antimicrobial nanomaterials that have been reported so far are associated with concerns about toxicity, environmental pollution, biological incompatibility and complex synthesis methods (Musee et al., 2011). As a result, there is still a challenge to produce efficient, new and environmentally friendly antibacterial nanomaterials. Zinc oxide is a crystalline semiconductor oxide with a direct energy gap of 3.37 eV. The important crystalline structure of zinc oxide is its wurtzite type. Zinc oxide is one of the main metal nanoparticles due to its special properties and high energy gap which has various applications in industry and environmental sciences. The immunity of Zinc oxide and its compatibility with human beings skin makes it a suitable additive for textiles and surfaces that come into contact with the human body (Liu et al., 2014). Zinc oxide nanoparticles show antimicrobial effects on Gram-positive and Gram-negative bacteria as well as spores that are resistant to high and low temperatures (Azam et al., 2012). The antimicrobial activities of Zinc oxide nanoparticles have been improved compared to micro particles due to the increase in the surface of nanoparticles, so the smaller the size of the particles has the greater antimicrobial properties (Padmavathy & Vijayarghavan, 2008). In general, Zinc oxide reduces the ability of bacteria; However, the mechanism of its antimicrobial activity is not well known yet. It has been suggested that the main factor of antimicrobial activities can be the production of hydrogen peroxide. The accumulation of particles on the surface of bacteria due to electrostatic force can be another mechanism of the antimicrobial effect of Zinc oxide nanoparticles (Zhang et al., 2008). However, interacting types of the produced oxygen on the surface of the particles, releasing of Zinc ion, disturbance in membrane and membrane processes, as well as the internal nanoparticles can be the possible causes of the cell damage (Hajipour et al., 2012). Considering the efficient metal resistance mechanisms and the high potential of Psychotropic microorganisms in the synthesis of nanoparticles and the very less studies that have been done regarding the synthesis of metal nanoparticles with these microorganisms, therefore, in the present research, the ability of new strains of cold-resistant bacteria isolated from the Zagros highlands located



in Lorestan province of Iran and some strains of *Streptomyces* isolated from the Sea of Oman to synthesize and determine the structure of Zinc oxide nanoparticles and its inherent properties as antibacterial agents have been studied.

## 2. Materials and Methods

### 2.1. The investigated strains

In this research, first, the 44 cold-resistant isolated strains from Zagros highlands located in Lorestan province and some *Streptomyces* strains from Oman Sea were purified. Then, their ability to produce Zinc oxide nanoparticles was investigated.

### 2.2. The determination of the Maximum Tolerance Concentration (MTC)

First, solid culture medium (TSB) 200ml with different concentrations (2.5, 5, 10, 25 and 50 Mm/l) of  $ZnSO_4 \cdot 4H_2O$ ,  $Zn(NO_3)_2 \cdot 5H_2O$  salts were prepared in separate jars, then the contents of each of the jars were transferred into sterilized microbial plates and were placed at 30°C for 24 hours. Then, all the plates were divided into different parts and the plates without salt (Zinc) were considered as the control for the growth of bacteria. Then, 5  $\mu$ L of the suspension of the studied strains (24-hour culture) with a 0.5 McFarland turbidity was inoculated on each of the plates. All the plates were placed in a greenhouse at 20°C and 30°C for 48 hours. A high concentration of metal in which bacteria cannot grow was introduced as MTC, and in this way, resistant and efficient strains were identified in the reduction of zinc cations (Shakya et al., 2012).

### 2.3. Synthesis, characterization of zinc oxide nanoparticles and molecular identification of the producing strain

The selected strains were inoculated in 400 ml of TSB liquid culture medium and were kept in a greenhouse for 48 hours in a shaker incubator at 20 °C at 150 rpm. After the growth and proliferation of the cells, the resulting supernatant was separated by centrifugation at a speed of 1000 rpm for 15 minutes. The resulting supernatant was added with nitrate and sulfate salts with a concentration of 0.01 Molar in a ratio of 1:1. All the samples were placed in an autoclave with a temperature of 121°C for 15 minutes and after 24 hours of incubation at room temperature, the produced nanoparticles were separated by centrifugation and after washing three times with deionized water and ethanol, they were dried at a temperature of 80°C. In order to remove the biological agents on the surface of the nanoparticles, the produced nanoparticles were placed in an oven at 470°C for 4 hours (Ghanbari et al., 2018). Then, the strain with the highest amount of sediment formation and color change of the supernatant was



selected for purification and characterization of the synthesized zinc oxide nanoparticles.

The purified nanoparticles were analyzed to measure the optical absorption by UV-vis spectrophotometer in the range of 200-400 nm. And some of the obtained sediment was used for X-ray diffraction (XRD) and dynamic light scattering (DLS) analysis. Molecular identification of the selected strain was done by amplification and sequencing of the 16srRNA gene.

#### 2.4. Measuring the antibacterial activity of nanoparticles

To study the antibacterial properties of zinc oxide nanoparticles, a stock of 2000 µg/ml of the nanoparticles was dispersed in ammonium citrate at a ratio of 2:1 and 40% glycerol. *E. coli* and *S. aureus* bacteria were inoculated in MHB sterile medium and kept in a greenhouse at 37 °C for 18 hours. And finally, by using physiological serum (0.9% sodium chloride), the turbidity of bacteria was adjusted in half McFarland (absorbance 0.08-0.13 at 630 nm wavelength), which in this case, the number of bacteria is equal to  $1.5 \times 10^8$  CFU/ml. The antibacterial activity of nanoparticles in different concentrations (4000 to 125 micrograms/ml) was used using the micro-dilution method (Andrews, 2001).

### 3. Results and discussion

The resistance level of 44 cold-resistant and *Streptomyces* strains to two salts, zinc sulfate and zinc nitrate at concentrations (2.5, 5, 10, 25 and 50 mM) were evaluated. The results showed that all strains have the ability to resist at concentrations more than 5 mM. According to the initial culture results, two cold-resistant strains and two *Streptomyces* strains were selected and also considering the results of the MTC test, the resistance of these strains to the zinc sulfate salt was more than that of the zinc nitrate. Therefore, concentrations of 10 mmol/L zinc sulfate were used to produce nanoparticles. In the following, *Streptomyces* strains were excluded from further analysis due to their slow growth. Of these, the OSNP13 strain with the highest amount of sediment formation and color change of the supernatant along by heating in the autoclave was selected for the purification and analysis of zinc oxide nanoparticles (figure 1).



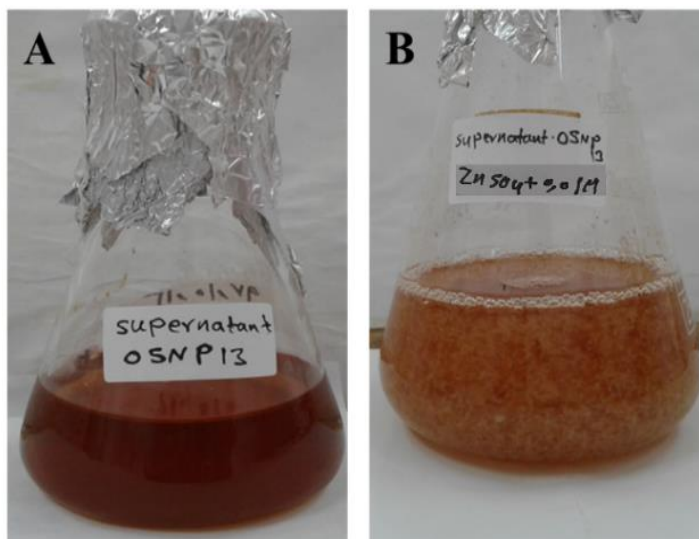


Figure 1: Production of oxide nanoparticles using the microbial culture supernatant method with autoclave heat. A and B, respectively, the supernatant of the OSNP13 strain, the supernatant after adding zinc sulfate salt and placing in the autoclave.

In this method, production of nanoparticles is in autoclave conditions or high pressure and temperature, the metal ions in the used salts are mostly in contact with the functional groups and secondary metabolites in the microbial culture supernatant and the reaction of producing nanoparticles or nucleation is done at a faster rate. In many studies has been mentioned that the NADH dependent enzymes have an important role in electron transfers during the biological production of nanoparticles. Therefore, there is no report about the production of zinc oxide nanoparticles by cold-resistant strains with this method. Ghanbari, Vaghari, Sayyar, Adibpour & Jafarizade 2017, succeeded in producing of silver nanoparticles by using *Aspergillus fumigatus* supernatant in autoclave conditions.

The results of UV-vis spectroscopy in Figure 2 show a distinct peak between 200 and 400 nm with maximum absorption at 269 nm, which indicates the presence of zinc oxide nanoparticles in the interaction solution and is caused by the superficial Plasmon resonance characteristic of these nanoparticles.

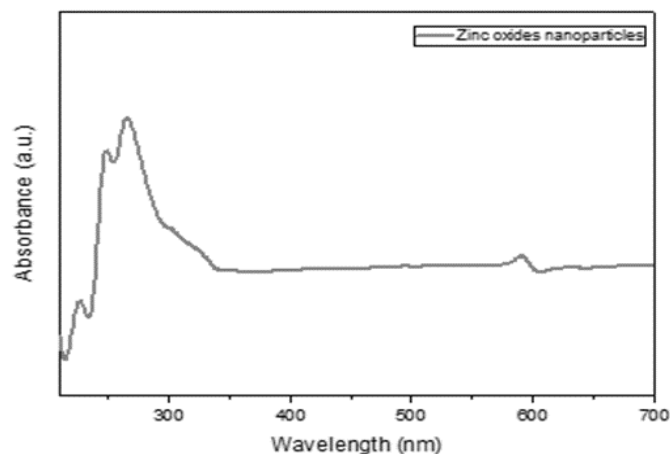


Figure 2: Uv-vis spectroscopy diagram for zinc oxide nanoparticles

The observed peak for zinc oxide nanoparticles is correspondent with the studies of Fooladsaz, Negahdary, Rahimi, Habibi-Tamijani, Parsania & Akbari-dastjerdi 2012 and Patil & Taranath 2016. The results of the nanoparticle size distribution diagram showed that the synthesized zinc oxide nanoparticles by *Microbacterium* sp. OSNP13 has an average size of 59.16 nm. As shown in Figure 3, the size distribution curve of the nanoparticles is almost bell-shaped, which indicates the distribution of the uniform proportion of the synthesized zinc oxide nanoparticles. The polydispersity index (PDI) of nanoparticles was recorded as 0.19, which indicates the high uniformity of the colloidal solution of nanoparticles synthesized in this study.

Based on reliable references, it has been reported that a uniform colloid sample of nanoparticles in which the monodispersity of the particles is high, has a PDI between 0.01 to 0.7. Non-uniform and polydisperse samples have a PDI higher than 0.7 to 1, which represents an inappropriate sample (Honary et al., 2013).

In Ghorbani, Mehr, Pazoki & Rahmani study in 2015, according to the results of the DLS technique, the average size of oxide nanoparticles produced by co-precipitation method was reported to be 30 nm. The difference in the average size of nanoparticles with the present study is due to the different method of nanoparticles production in these two studies.

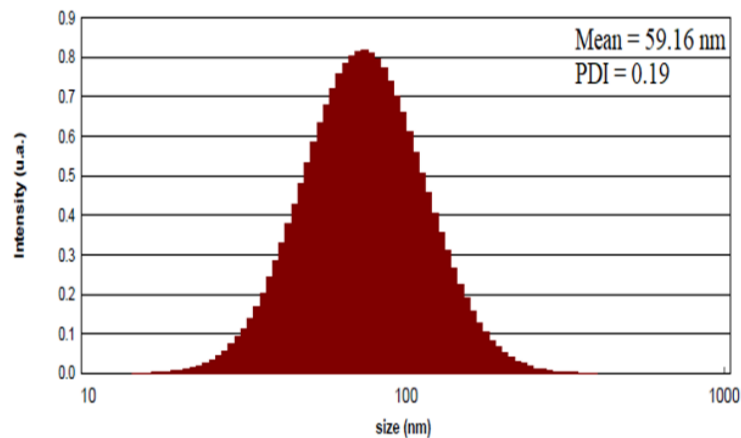


Figure 3: The size distribution pattern of synthesized zinc oxide nanoparticles.

In order to determine the network type and prove the crystalline structure of the zinc oxide nanoparticles, XRD analysis was used at  $2\theta$  angle and scanning range from 20 to 80 degrees which has specific peaks at the levels of 100, 002, 101, 102, 110, 103, 200, 112, 201 and 004 that shows the monoclinic structure of zinc oxide nanoparticles and is completely consistent with standard pattern (JCPDS File) 0002-043 (figure 4) (Shatnawi et al., 2016).

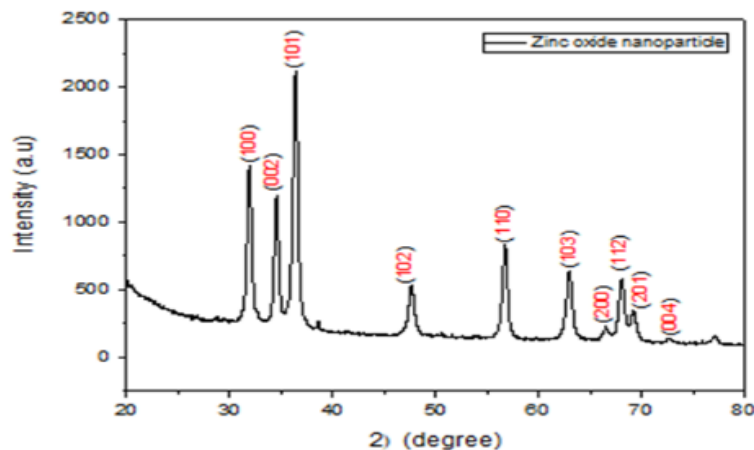


Figure 4: X-ray refraction analysis of zinc oxide nanoparticles.

The observed pattern for zinc oxide nanoparticles in Raoufi study in 2013 and Anvekar, Chari & Kadam in 2017 is completely consistent with the pattern observed in this study. According to the calculations based on the Debye-Scherer equation, the average size of the nanocrystals was calculated to be 19.25 nm for zinc oxide nanoparticles at an angle of 36.21 with the 101 crystal plane. The results of this section are consistent with the results of DLS

analysis and indicates the smaller size of the produced zinc oxide nanoparticles. Regarding the molecular identification of the strain that produces zinc oxide nanoparticles, after determining the sequence of the 16SrRNA gene and matching the results with EZTaxon and NCBI databases, the strain of *Microbacterium* sp. OSNP13 belongs to the genus *Microbacterium* with 100% similarity.

In the continuation of the antibacterial effect of ZnO nanoparticles produced by *Microbacterium* sp. SNP13 on Gram-negative *E. coli* and gram-positive *S. aureus* bacteria were investigated as indicators of gram-negative and gram-positive pathogens, respectively, in the concentrations range of 4000 to 125 µg/ml by broth microdilution method. (MIC) and (MBC) values of zinc oxide nanoparticles for two bacteria *E. coli* and *S. aureus* were calculated as 500 and 1000 µg/ml, respectively (Table 1).

Table 1: MIC and MBC values of zinc oxide nanoparticles.

Nanoparticles	Bacteria	MIC(µg/ml)	MBC(µg/ml)
ZnO NPs	<i>E. coli</i>	500	1000
	<i>S. aureus</i>	500	1000

With the increase in the concentrations of nanoparticles, a greater decrease is observed in the growth of bacteria compared to the control sample, and this increased inhibition depends on the concentration of nanoparticles. At concentrations lower than the MIC, nanoparticles inhibit the growth of part of the microbial population and are unable to inhibit the growth of the entire microbial population (Figure 5).

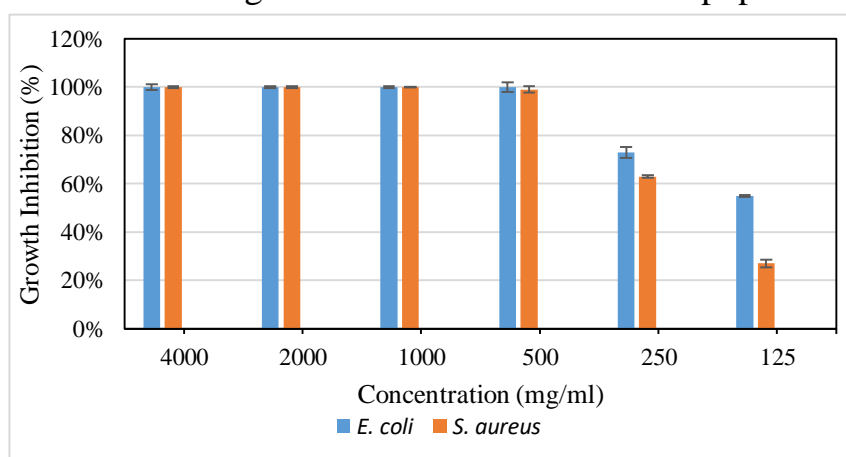


Figure 5: The inhibition percentage of the growth of pathogenic bacteria in different concentrations of zinc oxide nanoparticles

The results showed that the lethal concentration of nanoparticles used in this research had the same effects on Gram-positive and Gram-negative bacteria (Figure 6).

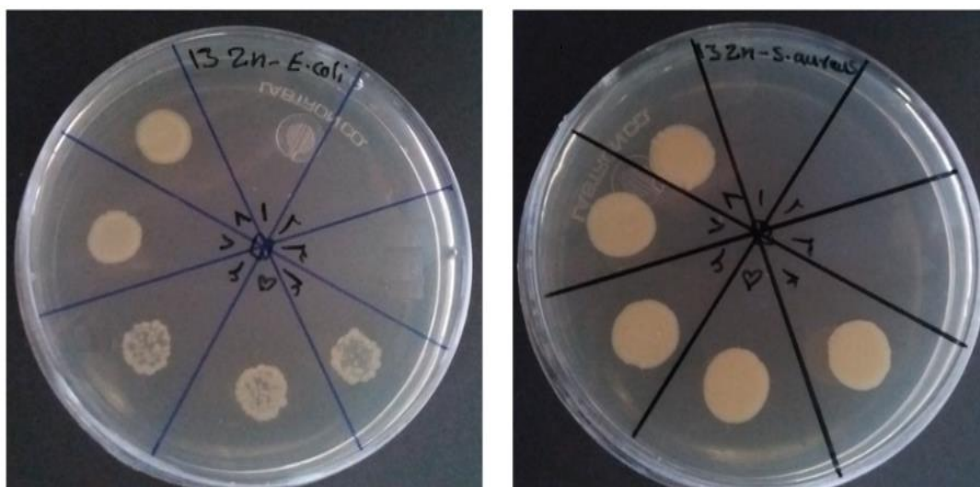


Figure 6: MBC test results for zinc oxide nanoparticles after 18 hours of greenhouse storage

In 2017 Şahin, Musevi & Aslani. reported the MIC value of zinc oxide nanoparticles produced in their studies on *E. coli* ATCC 25922 as 512 µg/ml. which is higher than the values calculated for the nanoparticles of this research. In 2013, Siddique, Shah, Shahid & Yasmin.. reported the MIC values of zinc oxide nanoparticles for *E. coli* and *S. aureus* as 21 and 8 mM, respectively (each milli molar was equivalent to 72 micrograms/ml), compared to the results of this research, the produced nanoparticles have shown less antimicrobial properties. Of course, in terms of comparing the nanoparticles used in this research, it has shown a suitable inhibitory and lethal effect compared to previous studies.

#### 4. Conclusion

In this research, the ability of cold-resistant bacteria was used in the biosynthesis of oxide nanoparticles. The production of zinc oxide nanoparticles by the selected strain of *Microbacterium* sp.OSNP13 was evaluated using the microbial culture supernatant method along with heating in autoclave conditions. The structure and characteristics of the produced nanoparticles were characterized by using Uv-Vis, XRD and DLS analyses. The characterization results have shown the accuracy of the production of these nanoparticles. According to the DLS analysis, the average size of the produced zinc oxide is 59.16 nm. Also, the polydispersity index (PDI) was calculated 0.19 for zinc oxide nanoparticles at physiological pH, which indicates the relatively appropriate



uniformity of these nanoparticles. The size of nanocrystals was also calculated by using the Debye-Scherer equation and it was 19.25 nm. The results are consistent with the results of DLS analysis and indicate the smaller size of the produced zinc oxide nanoparticles. Examining the antimicrobial effect of nanoparticles on *E. coli* and *S. aureus* bacteria showed that, in general, the produced nanoparticles have significant antibacterial properties, that can be used as an antimicrobial agent in many different fields, including Medical equipment, antibacterial surfaces, etc.

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## ЯК НАЗАР БА НАМУНАҲОИ АШЪОРИ ДУЗАБОНА ДАР АДАБИЁТИ БАДЕИИ АСРҲОИ XVII-XIX

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### АННОТАТСИЯ

Аз таърих ба мо маълум аст, чанчолхову задухӯрдҳои байни феодалҳо, ки дар асри XVII оғоз ёфта буд, то ибтидои асрҳои XIX низ муттасил давом кард ва ин ҳолат ба пешрафти адабиёти бадеӣ ҳам бетаъсир намонд. Маҳз дар натиҷаи ана ҳамин гуна беадолатиҳо дар адабиёти бадеӣ ду ҷараёни калони то андозае ба ҳам муқобил ба вучуд омаданд. Яъне, дар эҷоди баъзе осорҳо танҳо мадҳу ситоиши ҳукмронони давр ба назар расад, дар қисми асосии асарҳои адабони ин давр вазъи замон, беадолативу норасоии ҳаётӣ, зиндагии мардуми меҳнатӣ ифодаи худро ёфтаанд.

**Калидвожаҳо:** таъаддӣ, мазҳака, салиқа, реал, қушбегӣ, мухаммас, соқӣ, иртиҷоъ.

### ANNOTATSIYA

Tarixdan ma'lumki, feodallar o'rtasida 17-asrda boshlangan janjal va kurashlar 19-asr boshlarigacha davom etgan va bu holat adabiy adabiyot rivojiga o'z ta'sirini ko'rsatmagan. Ana shu adolatsizliklar natijasida adabiy adabiyotda ikki yirik va bir oz qarama-qarshi oqim vujudga keldi. Ya'ni, ayrim asarlar yaratilishida faqat davr hukmdorlarining maqtovi, bu davr adiblari ijodining asosiy qismida davr ahvoli, adolatsizliklar va hayotiy kamchiliklar, o'sha davr hukmdorlarining maqtovlari ko'rinadi. mehnatkash xalq hayoti o'z ifodasini topdi.

**Kalit so'zlar:** taaddi, komediya, salika, real, qushbegi, muhim, soqiy, reaksiya.

### ABSTRACT

As we know from history, quarrels and fights between feudal lords, which started in the 17th century, continued until the beginning of the 19th century, and this situation did not leave an impact on the development of literary literature. It was as a result of these injustices that two large and somewhat opposite currents emerged in the literary literature. That is, in the creation of some works, only the praise of the rulers of the period can be





seen, in the main part of the works of the writers of this period, the situation of the time, the injustices and life deficiencies, the life of the working people found their expression.

**Keywords:** taaddi, comedy, salika, real, kushbegi, important, soki, reaction.

## ҚИСМИ ДАРОМАД

Робитаи адабиёти хаттӣ бо эҷодиёти даҳонакии халқ маҳз дар ҳамин давра вусъат гирифта, намуди нави он - дар асоси сюжетҳои халқӣ офарида шудани китобҳои хаттӣ ба миён омаданд. Аз ҷумла «Тоҳир ва Зухро», «Санобар», «Баҳром ва Гуландом» барин дostonҳо китобат карда шудаанд, ки дар онҳо ба зидди беадолативу ноинсофӣ, зулму таъаддӣ мубориза бурдани халқи оддӣ, мардуми захматкаш, инчунин васфи муҳаббат, тантанаи ишқи пок акси худро ёфтаанд.

Маҳз дар адабиёти бадеии ин давра лирика ва жанрҳои гуногуни он бештар инкишоф ёфта, дар ин бобат Машраб, Шӯхӣ, Вафой, Нодир, Ғозӣ, Нодира, Увайсӣ, Маҳзун, Мучрим, Обид, Равнақ, Мунис, Огаҳӣ ва дигарон ба онҳо бештар эътибор додаанд. Яъне дар жанрҳои гуногун эҷод карданд. Дар баробари ин мавзӯи иҷтимоӣ низ ба адабиёт саҳт алоқамандӣ пайдо кард. Дар мазмуни адабиёти ин давр ҳамчунин ҳаҷву мазҳака, танқиду тамасхӯрӣ низ мавқеи калон пайдо намуда дар ин соҳа Турдӣ, Маъдан, Акмал, Махмур, Гулханӣ барин намояндагони адабиёти пешқадам қалам ронда, то андозае ба фoш кардани иллатҳои ҷамъият муваффақ шудаанд. Бар хилофи расмияти адабиёти дарборӣ аз замонаи нотинчу парешон, зулму бедодгарии аҳли сарвату мансаб, аҳволи вазнини халқи аз пой афтода, вайронҳои шаҳру деҳаҳо, афтодарӯҳии аҳли илму ҳунар дар навистаҳои худ шикоят мекарданд.

Бо вучуди инкишофи жанри лирика Нишотӣ, Андалеб, Ҳозик барин шоирон анъанаҳои дostonсароии гузаштaro бо муваффақият давом дода тавонистанд. Дар адабиёти ин давра қариб аксар жанрҳои адабиёти мумтози ўзбек ва форсу тоҷикро пайдо кардан мумкин аст. Намояндагони зиёде ба майдони адабиёт ворид шуданд, ки ҳам дар наср ва ҳам дар назм ва бо ду забон эҷод мекардагӣ шуданд.

Яке аз хусусияти асоситарини адабиёти ин давра (махусан дар доираҳои адабии Бухоро ва Қўқанд) давом ёфтани анъанаи зуллисонанӣ, яъне ба забонҳои тоҷикӣ ва ўзбекӣ пайваста эҷод кардан буд. Бисёр широни ин давр ба ҳар ду забон ҳам асарҳои аз ҷиҳати ғоявӣ пурмазмун ва аз лиҳози мавзӯ ва мундариҷа хеле баланд офарида тавонистанд. Аз ҷумла, Турдӣ, Гулханӣ, Махмур, Ҳозик, Маъдан, Нодира,

Увайсӣ, Дилшоди Барно ва як қатор дигарон мебошанд, ки эҷодиёти онҳо бояд ба комилӣ аз ҳар ҷиҳат омӯхта шаванд.

### ҚИСМИ АСОСӢ

Анъанаи зуллисонайнӣ маҳз дар ҳамин давра хеле ривоч ёфта паҳлӯҳои гуногуни он ҳам аз ҷиҳати мавзӯву мундариҷа ва ҳам аз ҷиҳати шаклу жанр тақомул ёфт. Ҳар як адиби зуллисонайн ба майдони адабиёт бо сабку салиқа ва диди хоси хеш ворид гардиданд. Дуруст аст, ки бисёре аз онҳо ин анъанаро, ки ҳанӯз дар адабиёти пешина асос гузошта шуда буд, давом доданд. Ин умумият бештар дар жанру шаклҳои адабӣ зуҳур карда бошад, аммо дар интиҳоби мавзӯ ва мундариҷа фарқиатҳои кулӣ ба назар мерасиданд. Чӣ хеле ки дар боло зикр шуд, тезутундҳои байни хонигариҳову сулолаҳо ба мазмуни ашъори адибони зуллисонайн бетаъсир намонд. Онҳо дар ҳамаи жанрҳои мавҷуда бо санъати баланд аҳволи иҷтимоии мардумро ошкоро ба риштаи назм мекашиданд. Ин фикрҳоро пас аз муоинаи мазмуни ашъори чанде аз намояндагони он давом медиҳем.

**Турдӣ – адиби зуллисонайн.** Яке аз шорони нимаи дууми асри XVII, ки дар давоми салтанати аштархониҳо зиндагӣ ва эҷод кардааст, Турди-Фароғӣ ба шумор меравад, ки вай низ ба ду забон асарҳои лирикӣ ва ҳаҷвӣ офаридааст. Вай адабиёти бадеиро бо образҳои реалӣ-ҳаётӣ бой гардонида тавассути асарҳои ҳаҷвиаш воқеаҳои даврро рӯи рост танқид карда нисбати беадолатӣ, сохтори ҳукмронии феодалӣ баромад мекунад.

Дар эҷодиёти вай мухаммаси «Дар ҳаҷви Субҳонқулиҳон ва амиру амалдорони вай» мавқеи ҷудогонаро ишғол мекунад. Дар ин асар хислатҳои ношоёнӣ амиру амалдорон рӯи рост ва фошофош танқиду масҳара карда шудааст. Чунончи:

Едингиз барчангиз итдек фуқаронинг этини,  
Ғасб ила молни олиб, куймадингиз битини,  
Қамчилар доғ солиб буюнға, тилиб бетини,  
Ёрдингиз захрасини (ичидан) олиб утини,  
Бӯлмади кам бу раият бошидан ҳеч таёк.

Мухтасари мазмуни он чунин аст: шумо гӯшти фақиронро ҳамчу сагон хӯрдед. молу манови онҳоро ба ҳукми зӯрӣ гирифтед ва ҳатто шабушкашро намондед. Аз зарби тозиёнаҳои шумо дар гардан доғу дар рӯй нақшу изҳо мондаанду бас. Талҳаи мардумро кафонда, захри

онро ҳам кашида гирифтаед ва ба туфайли шумоҳо аз сари раият калтак кам нашуд.

Рости гап, шоир Турдӣ дар бисёре аз жанрҳои адабӣ қалам рондааст ва махсусан мавзӯҳои танқидиашро дар мухаммасоташ ҷой додааст. Номи мукаммали мухаммаси болоӣ «Дар асри Субҳонулиҳон ва бидъатҳои хон ва ғуломон ва умарои он ва иноқ будани Бойлоқ кушбегӣ мухаммаси туркӣ дар ҳаҷви онҳо таҳрир намуда шуд» буда, дар он шоир кирдуқори ношоёни ҳукмдорони даврро, беадолативу мансабпарастии онҳоро рӯи рост танқид мекунад.

Турдӣ ба забони форсӣ-тоҷикӣ низ шеърҳо гуфтааст, ки аз мукамал донишманди ӯ ин забонро гувоҳӣ медиҳанд. Мухаммаси бар ғазали Саъдӣ гуфтаи ӯ аз ҷумлаи асарҳои форсӣ-тоҷикии ӯст, ки банди аввалаш ин аст:

Барги ҳар тозагуле шоҳиди мадди назаранд,  
 Ҳар варақ сафҳаи манзур зи аҳли басаранд,  
 Хушклуб, доғ ба дил, ташна ба хуни чигаранд,  
 Нест он лолаки дар бодияҳо чилвагаранд,  
 Куштагонанд, ки аз хок бароварда саранд.

Турдӣ дар шаклҳои гуногуни лирика асарҳо эҷод карда, беҳтарин анъанаҳои Саъдӣ, Навоӣ, Ҷузулӣ барин шоирони пешинаро давом додааст.

**Муҳаммад Шариф Гулханӣ – адиби дузабона.** Яке аз намоёндагони дигари адибони дузабонаи адабиёти охири асри XVIII ва ибтидои асри XIX Муҳаммад Шариф Гулханӣ мебошад, ки вай барои адабиёти ўзбек ва тоҷикии ин давр қариб баробар хизмат кардааст. Аз манбаъҳои илмӣ маълум аст, ки аксари адибони зуллисонайн унвонҳои гуногун, азҷумла Ҳазрат, Шайх, Аллома, Маликушшуаро, Амир, Мирзо, Сайид, Ҳоҷа ва ғайраро соҳиб мебошанд. Муҳаммад Шариф Гулханӣ ба равзаи адибони зуллисонайни беунвон дохил мешавад. Бо вучуди ин аз маълумотҳои то ба мо, омада расида, аз ҷумла ахбори «Маҷмӯаи шоирон» ном тазкираи Фазли Намангонӣ, инчунин асари Қори Раҳматулло Возеҳ «Тӯҳфат-ул-аҳбоб фи тазкират-ул-асҳоб» равшан мегардад, ки Гулханӣ тахминан дар солҳои 70-уми асри XVIII тавлид ёфта, падараш аз тоҷикони кӯҳистон будааст. Вай ҳанӯз дар овони ҷавони ба хидмати дарбор кашида шуда навқарӣ кардааст, ки дар ин хусус Фазлӣ дар тазкирааш чунин меорад:

Бувад Гулханӣ шоири кӯҳсор,  
 Ба даргоҳи шоҳист ўро қарор..  
 Зи мардони корист дар зўру чанг,



## Салоҳаш ба каф теғу тиру тўфанг.

Возех дараҷаи шоирии Гулханиро бо ибораи «бисёр соҳибкамол ва бадеъ-ул-иртиҷол» нишон дода, кайд мекунад, ки «дар шеърӯ қасоид китобе низ муруттаб намудааст». Мутаасифона ин девон то ба мо омада нарасидааст. Аз вай танҳо чанд ашъори парокандаи тоҷикӣ ва ўзбекӣ, инчунин асари тамсилии «Зарбулмасал» дастрас шудаасту халос. Ин асар нуқтаи баланди эҷодиёти вай мебошад, ки ҳам аз ҷиҳати мундариҷаи ғоявӣ ва ҳам аз ҷиҳати маҳорати адабӣ хеле баланд нависта шудааст. Дар ин асар ҳаракатҳои шоирро дар инъикоси пешрафти ҳаёти мардум диданамон мумкин аст.

Лирикаи Гулханӣ асосан ишқу муҳаббат, иҷтимоӣ-гражданӣ буда, дар вай оҳанги шикоят аз зиндагӣ, маҳрумӣ ва беҳосилии умеду орзуҳои мардуми бечора, ки ҳуди шоир низ яке аз онҳо буд, равшантар шунида мешавад. Фазлӣ дар тазкираи худаш “бо алфози худ” шеър гуфтани вайро чандон хуб напазируфтааст ва онро борҳо бо таънаву таҳқир такрор кардааст. Тибқи маълумотҳои вай Гулханӣ дар баробари шеърҳои ҷиддии лирикӣ ва иҷтимоияш шеърҳои ҳаҷвӣ низ мегуфтааст ва дар онҳо мазмуну тарзи ифодаҳои халқиро бештар ҷой меодааст, ки ин аз мартабаи пасти шеърӯфарӣ ҳисобида мешудааст. Ҷиҳати намунаи ашъори вай ду ғазали ўро ба тариқи мисол ба забонҳои тоҷикӣ ва ўзбекӣ меоварем:

**Намунаи тоҷикӣ:**

Саҳар, ки булбули шӯрида нолае сар кард,  
Зи хуни дида гули сурх домане тар кард.  
Кулоҳгӯшаи худро шикаст гул ба чаман,  
Бунафша сачдаи таъзимро муқаррар кард.  
Забони шонаи савсан ба турраи сунбул,  
Сабо чу теғ муҳарраф заду муҳассар кард.  
Чунон ба пойи гул афтод сабза хурраму маст,  
Ки ёди хеш ба ҳангоми субҳи маҳшар кард.  
Сабо бисоти заминро ба сити бўқаламун,  
Бидод зеб, ки натвон ба гуфт бовар кард.

**Намунаи ўзбекӣ:**

Терламиш май тобидин, гулбарги рухсорин кӯрунг,  
Раҳзани дил ўлди тори зулфи зуннорин  
кӯрунг.



Белу оғзидин нишон гар бир сари мӯ десалар,  
Айларам инкору иқроп этмасам ворин кӯрунг.  
Ўз маконини тилар ҳар гаҳ қафасдин қочса куш,  
Эйки истарсиз кўнгулни зулфи ҳар торин кӯрунг.  
Ғамзаси жоним олур, новаклари бағрим тилар,  
Золими бераҳм озор узра озорин кӯрунг.  
Соқиё, ҳажр илгида хуноба ютдим, Гулханий,  
Ғайр ила базм ичра они жоми саршорин кӯрунг.

Худ аз худ маълум аст, ки ҳар ду ғазал бо забонҳои ўзбекӣ ва тоҷикӣ аз ҷониби вай нависта шуда, мавзӯи ишқӣ-ичтимоиро фаро гирифтааст. Боиси қайд аст, ки Гулханӣ дар ҳақиқат аз санъатҳои фаровони бадеӣ хуб огаҳ буда, дар офариниши жанри ғазал сабки хоси худро доштааст. Пуробурангӣ ва таровати гӯйиш бо ифодаҳои мутаносиби шеърӣ, аз қабилӣ булбули шӯрида, хуни дида, сачдаи таъзим, шонаи савсан, турраи сунбул, субҳи маҳшар, бисоти замин, сити бўқаламун ё дар намунаи ўзбекиаш гулбарги руҳсор, зулфи зуннор, узра озор, золими бераҳм, ғайр ила, базм ичра, жоми саршор барои ифода кардани эҳсоси ошиқ, ки бевосита худи ўст, зеби маънӣ бахшидаанд. Агар ба банду басти мисраъу байтҳо жарфтар назар афканем, боз гувоҳ мешавем, ки Гулханӣ аз санъати мавзунияти суҳан ва авзони тоҷикӣ низ ба хубӣ огаҳ будааст...

**Мулло Маъдани дузабона.** Дар ибтидо таҳаллуси эҷодиаши Камина буд, дертар ба худ таҳаллуси Маъданро қабул кардааст. Вай ҳарчанд ҳаёти вазнин дошт, вале марди сӯҳбаторою рӯҳбаланд буд. Дар маҷлису чамъомадҳо бисёр сӯҳбатороёна суҳан мегуфт ва диққати шунавандагонро ба худ ҷалб мекард. Вай бо ҳангомаҳои латифи худ таъби мардуми ҳамсӯҳбаташро хушу болида мегардонд. Бо мақсади намуна аз эҷоди шоир ҳам ба забони тоҷикӣ ва ҳам ба забони ўзбекӣ мисол меоварем

#### **Намунаи ўзбекӣ:**

Бода тут, соқий, раҳи майхона кўргузгил манга,

Барқи истиғнойи ишрат ёна кўргузгил манга.

Чарҳдин ком истамак эрмас бани одамга қурб,

Муттақойи ишқдин афсона кўргузгил манга.

Водийи ҳижрона чекан ранҷдин ўлмама малул,

Суҳбати чуғз истарам, вайрона кўргузгил манга.

То нузул ўлдум, қадаҳдин дайр аро бўлдум хумор,

Соқие, раҳм айлагил, паймона кўргузгил манга.

Қатраи ашқимни тўфони жунунсоз айлагил,

Маърифат дарёсидин дурдона кўргузгил манга.

Шоми хижрон узра кўнглум зоҳири эрмиш хомуш,

Шохсори субҳдин уйғона кўргузгил манга.

Ҳар қачон базм аҳлидин қатъи тааллуқ айларам,

Бори ғамдин соғари риндона кўргузгил манга.

Ишкдур, Маъдан, рафиқим вақти ғам туғёнида,

Пайкарим урёни ғам парвона кўргузгил манга.

#### Намунаи тоҷикӣ:

Омад шабе дар кулбаам, гуфтам ҳазорон марҳабо,

Чидам ғубори мақдамаш, бар дида кардам тўтиё.

Шамъе зи оҳ афрўхтам, парвонаосо сўхтам,

Бар анчуман омўхтам таъдили аркони вафо.

Бунёди ҳастӣ то адам кардам нисори ҳар қадам,

Ин ҳар ду гетиро ба ҳам судам ба санги осиё.

Ҳар чо нишастам, сўхтам, бо дарду ғам пардохтам,

Худро магар нашнохтам, аз шеваи нашъунамо.

Маҳфилфароз аз ҳайратам, восўхт доғи кулфатам,

Базми чароғи зулматам, чун субҳи козиб безиё.

Ҳусне, ки дар Мисри тараб овоза дорад бар лақаб,

Омад ба бозори талаб нақди ду олам дар бақо.

Маъдан, арўси табъи ман дорад паси оина тан,

Вақти тақозои суҳан рӯ баркушояд аз қафо.

Ҳангоми омӯхтани эҷодиёти адибони дузабона, ки дар боло мухтасаран зикрашон намудем, маълум мешавад, ки онҳо дар жанр ва шакл бевосита ба намунаҳои ашъори шоирони пешин тақия карда, эҷодиёти худро давом додаанд. Аз ҷумла аён шуд, ки Турдӣ дар навистани мухаммас бевосита ба Саъдии Шерозӣ пайравӣ кардааст.

Дар мавриди омӯзиши бадеияти ашъори Гулханӣ бевосита гуфтаҳои Қорӣ Раҳматуллоҳи Возеҳ айна муддао ҳастанд, зеро дар шеърро қасоид китоб дорад ва шоири бадеъ -ул- иртиҷоъ аст, гуфтани вай бесабаб нест. Чунки Гулханӣ бо вучуди дар дарбор қор қарданаш бисёр ҳам одами фуртакигӯй, ба таври бадеҳа бидуни фикру андеша суҳан мегуфтааст. Худ аз худ дар ғазалҳои болоӣ низ истифодаи санъатҳои бадеӣ, минҷумла ташбеҳу истиора аз бадеияти баланди ашъори вай гувоҳӣ медиҳанд.

Дар равзаи адибони зуллисонайн унвони Мулло гирифтани Маъдан бесабаб нест. Аз луғатҳо ба мо аён аст, ки мулло ба маъноҳои олими дин ва шарият, домуллои мадраса ё ҳамчун калимаи эҳтиром ба номи шахси босаводу соҳибмаърифат ва баъзе ҳешовандони арҷманд ...илова қарда мешуданд. Инчунин, калимаи мулло аз мавлоно сарчашма мегирад, ки ин унвон то асрҳои XVII – XIX омада, баъд аз он доираи истифодааш хеле маҳдуд шуда буд. Азбаски Маъдан саводи ибтидоиро аз падари босаводаш, ки аз бошандагони деҳаи Ашти ноҳияи Понғоз буд, гирифтааст ва сипас дар Пунук аз Муҳаммадамини Қосонӣ таълим бардоштааст ва ҳамчун донандаи қуръон ном бароварда буд, шояд аз ин рӯ ба он унвони Мулло адиби зуддисонайн дода бошанд...

Аз рӯйи ду ғазале, ки ҷиҳати намуна овардем, маълум мешавад, Мулло Маъдан дар жанри ғазал бештар эҷод намудааст. Бадеият ва оҳанги ғазалҳояш хеле ҷозибанок мебошанд, ки аз ин рӯ баъзе аз онҳо ба оҳанг дароварда шуда аз ҷониби ҳофизон суруда шудаанд.

## ХУЛОСА

Дар ҳаҷми мухтасар овардани маълумот ва намунаҳо аз ашъори онон доир ба намояндагони адибоне, ки бо унвони “Адибони зуллисонайн” дар адабиёти мо мавқеъдоранд, ин буд, ки аз онҳо ба фикри мо бояд ба китобҳои дарсӣ ҳатман дохил қарда шаванд. Чунки дар барномаҳои китобҳои дарсӣ доир ба ҳаёту фаъолияти адибони зуллисонайн ба таври парешон маълумотҳо дода шудаанд.



Хуб мешуд, ки дар мавриди омӯзиши фанни Адабиёт (дар синфи 8) хангоми хондани мавзӯи “ Анъанаҳои адабии давр” ( сах.160-164) бо мақсади омӯзиши эҷоди онҳо ҳам соатҳои дарсӣ чудо карда шаванд ва маълумоти фаровонтар чой дода шаванд. Чунки омӯзиши амиқи эҷодиёти адибони зуллисонайн барои устувор нигоҳ доштани робитаҳои адабӣ ва дар минбаъд давом ёфтани ин анъанаи зуллисонайнӣ заминаҳои мустақкам шуда метавонанд. Азбаски бисёре аз шоирони ин муҳити адабӣ ба ду забон – ўзбекӣ ва тоҷикӣ шеърҳо офаридаанд, омӯхтан ва дониستاني паҳлӯҳои он барои ҳар ду халқ ҳам хеле аҳамиятнок аст.

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## ФУЗАРИУМ ЗАМБУРУҒИ БИЛАН ЗАРАРЛАНГАН НЎХАТ ЎСИМЛИГИ НАМУНАЛАРИДА SPAD 502 КЎРСАТКИЧИНING ЎЗГАРИШИ

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### АННОТАЦИЯ

Ушбу мақолада дала шароитида экилган кузги нўхатнинг CIENW-Chickrea International Elite Nursery for Winter Халқаро элита кўчатзори намуналарида барг ранги, фузариум билан зарарланиш даражаси, соғлом ва касалланган намуналардаги SPAD 502 кўрсаткичининг ўзгариши ўрганилди. Натижада касалланиш даражаси паст, SPAD 502 кўрсаткичи барқарор бўлган намуналар танлаб олинди.

**Калит сўзлар:** фузариум, нўхат, биотик стресс, чидамлилиқ, фотосинтетик пигментлар

### ABSTRACT



In this article, changes in leaf color, level of *Fusarium* infection, SPAD 502 index in healthy and diseased samples of CIENW - Chickpea International Elite Nursery for Winter International elite nursery samples of winter Chickpea planted in field conditions were studied. As a result, samples with a low morbidity rate and a stable SPAD 502 index were selected.

**Keywords:** fusarium, chickpea, biotic stress, tolerance, photosynthetic pigments

## КИРИШ

Нўхат оқсилга бой қимматли озиқ-овқат экинларидан бири ҳисобланади. Унинг дони таркибида ўртача 25% оқсил, 4,5% мой, 46% гача крахмал, В<sub>1</sub> витамин, турли минерал тузлар ва овқат ҳазм қилишга ёрдам берадиган энг муҳим аминокислоталар мавжуд [10]. Бу ўсимликка турли замбруғлар ва зараркунанда ҳашаротлар катта зарар етказади. Булардан бири *Fusarium* туркумига мансуб замбруғлардир. *Fusarium* туркумига мансуб замбруғларнинг вакиллари 400 дан ортиқ турдаги ўсимликларни, республикамизда эса 100 га яқин қишлоқ хўжалик экинлари ва бегона ўтларни касаллантиради. Бу замбруғлар фузариоз касалигини келтириб чиқаради. Нўхат экилган деярли ҳамма майдонларда бу касаллик учрайди. Замбруғ асосан тупроқ ва уруғ орқали ўсимликка ўтади. Бу касаллик, ёғингарчилик кўп бўлган йиллари яққол намоён бўлади. Касаллик экинни ёшлигидан бошлаб зарарлаши мумкин. Замбруғ экинни ўтказувчи тўқималари бўйлаб пастдан юқорига қараб ҳаракатланади ва ҳамма органларини касаллантиради. Натижада ўсимлик сўлийди, барги сарғаяди ва тўкилади. Ёш майсалар фузариоз билан касалланса ўсимлик қурийди. Кейинги фазаларда касалланса уруғи пуч ёки ҳосили жуда кам бўлади. [8]. Шунинг учун нўхат ўсимлигида ушбу замбруғга чидамли нав ва тизмаларни ўрганиш долзарб муаммо ҳисобланади.

## АДАБИЁТЛАР ТАҲЛИЛИ

SPAD 502 ўсимликларнинг турли вегетация даврларидаги азот ҳолатини баҳолашда ўсимликни зарарламасдан диагностика қилиш имкониятини берадиган қурилма ҳисобланади [1]. SPAD 502 кўрсаткичи ва баргларидаги



фотосинтетик пигментлар миқдори ўртасида кучли ижобий корреляция мавжудлиги тадқиқотларда аниқланган [5]. Нўхат ўсимлигининг унувчанлиги, ўсиши ва ривожланиши ҳамда баргларидаги пигментлар миқдорига микробиологик ўғитларнинг ижобий таъсири ўрганилган [6,7,9]. Ярим қурғоқчил муҳитда ўсадиган нўхат ўсимлиги гермоплазмасидаги SPAD кўрсаткичи барқарор намуналарда қурғоқчиликка чидамлилиқ кузатирилган [4].

Ўсимликлар баргларидаги пигментлар миқдорининг ўзгаришига турли биотик ва абиотик омиллар салбий таъсир қилади. Булардан бири фузариум авлодига мансуб замбруғлардир. Фузариум замбруғи нўхат ҳосилдорлига катта зарар етказувчи асосий биотик стресслардан бири ҳисобланади. Фузариум билан касалланган нўхат ўсимликларида минераллар яъни азот, фосфор, калий, калций, магний, натрий, рух, темир ва мис миқдори камайиши аниқланган [3]. *Fusarium verticillioides* билан зарарланган ўсимлик баргларида хлорофилл а ва хлорофилл б миқдорининг кескин пасайиши, каротиноидлар миқдорининг сезиларли даражада ўзгармаслиги ўрганилган [2].

## ТАДҚИҚОТ ОБЪЕКТИ ВА УСЛУБЛАРИ

Тадқиқотлар ЎзРФА Генетика ва ЎЭБ институтининг Дўрмон дала тажриба участкасида олиб борилди. Тадқиқот объекти сифатида кузги нўхатнинг CIENW- Chickpea International Elite Nursery for Winter Халқаро элита кўчатзоридидаги 36 та намунада фойдаланилди. Фенологик кузатувлар давомида баргларининг ранги, *Fusarium* туркумга мансуб микромицет *Fusarium oxysporum* ва *Fusarium solani* билан касалланиш даражаси ўрганилди. Баргларидаги пигментлар ҳолати SPAD 502 қурилмаси кўрсаткичига қараб баҳоланди. Тажриба асосида олинган маълумотларнинг статистик таҳлили EXCEL 2016 да, ANOVA бўйича Stat View дастурида амалга оширилди.

## НАТИЖАЛАР ТАҲЛИЛИ ВА МУҲОКАМАСИ

Хорижий кузги нўхат кўчатзорининг 36 та намунаси рендомизация усулида, икки қайтариқда 3 м<sup>2</sup> ли майдонларда экилди ва фенологик кузатувлар олиб борилиб, SPAD 502 қурилмаси орқали соғлом ва касал ўсимликлар



барглардаги пигментлар ҳолатини баҳолаш мақсадида SPAD кўрсаткичи аниқланди (1-жадвал). Кўчатзор намуналаридан 13 тасида барги оч яшил, 23 тасида тўқ яшил эканлиги аниқланди. Ўсимликларнинг фузариум билан касалланиш даражаси 2,15 – 14,09 % ни ташкил қилди (1-расм). Бунда К-133 намунасида касалланиш даражаси энг паст кўрсаткич, К-105 намунасида эса энг юқори кўрсаткич қайт этди.

1-жадвал

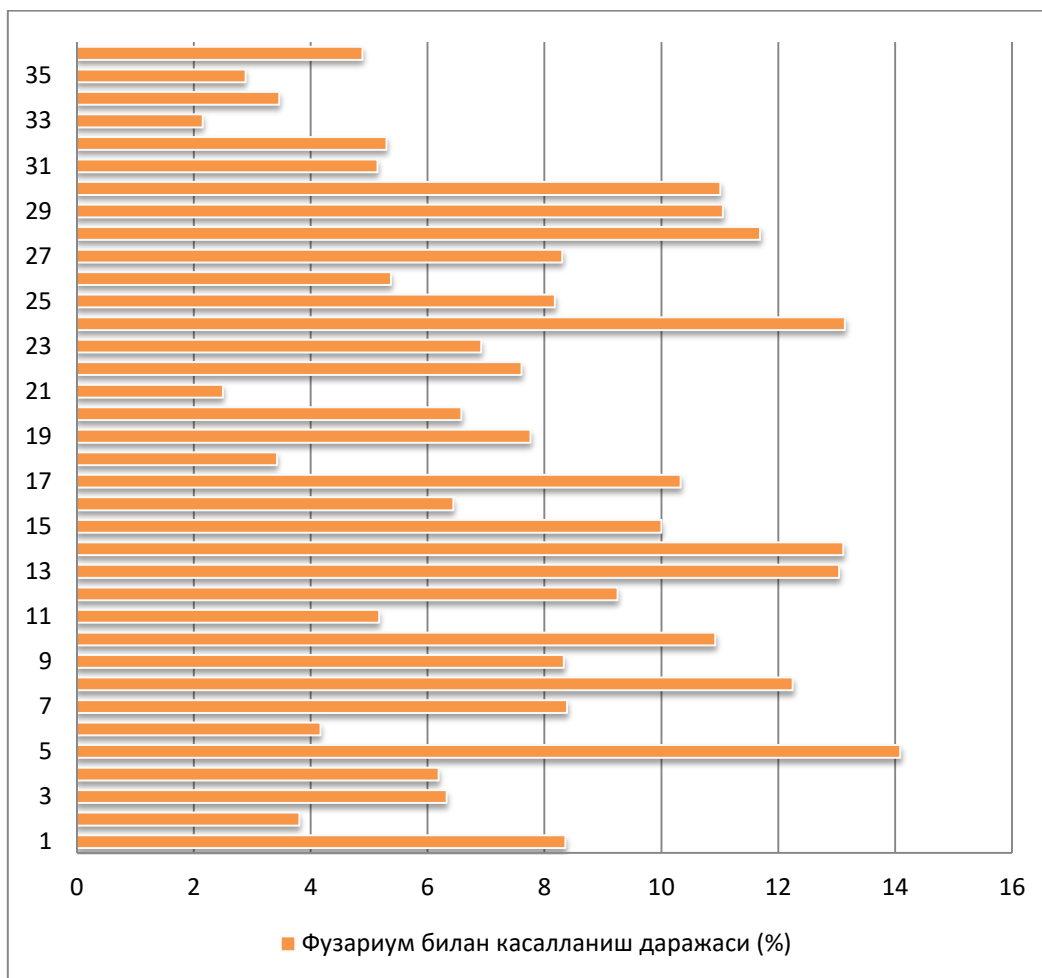
CIENW- Халқаро элита кўчатзори намуналарининг барг ранги, фузариум билан касалланиш даражаси ва SPAD кўрсаткичи

CIEN-W-22	Барг ранги	Фузариум билан касалланиш даражаси (%)	SPAD кўрсаткичи (соғлом ўсимликларда)	SPAD кўрсаткичи (касал ўсимликларда)
101	тўқ яшил	8,36	62,44	24,39
102	тўқ яшил	3,81	55,78	23,75
103	оч яшил	6,33	56,67	24,55
104	оч яшил	6,19	60,35	27,71
105	тўқ яшил	14,09	63,13	18,37
106	тўқ яшил	4,17	59,27	22,42
107	тўқ яшил	8,39	55,01	13,91
108	тўқ яшил	12,25	56,52	14,20
109	оч яшил	8,33	60,58	17,27
110	тўқ яшил	10,92	64,79	22,82
111	тўқ яшил	5,17	59,67	25,54
112	тўқ яшил	9,25	56,19	24
113	тўқ яшил	13,04	61,14	29,9
114	тўқ яшил	13,11	61,68	19,58
115	оч яшил	10	61,87	21,47
116	тўқ яшил	6,44	55,92	22,34
117	тўқ яшил	10,33	58,77	30,33
118	оч яшил	3,42	58,94	26
119	тўқ яшил	7,76	64,18	23,87
120	тўқ яшил	6,58	58,21	27,33
121	оч яшил	2,5	61,53	22,6
122	оч яшил	7,61	54,08	21,51

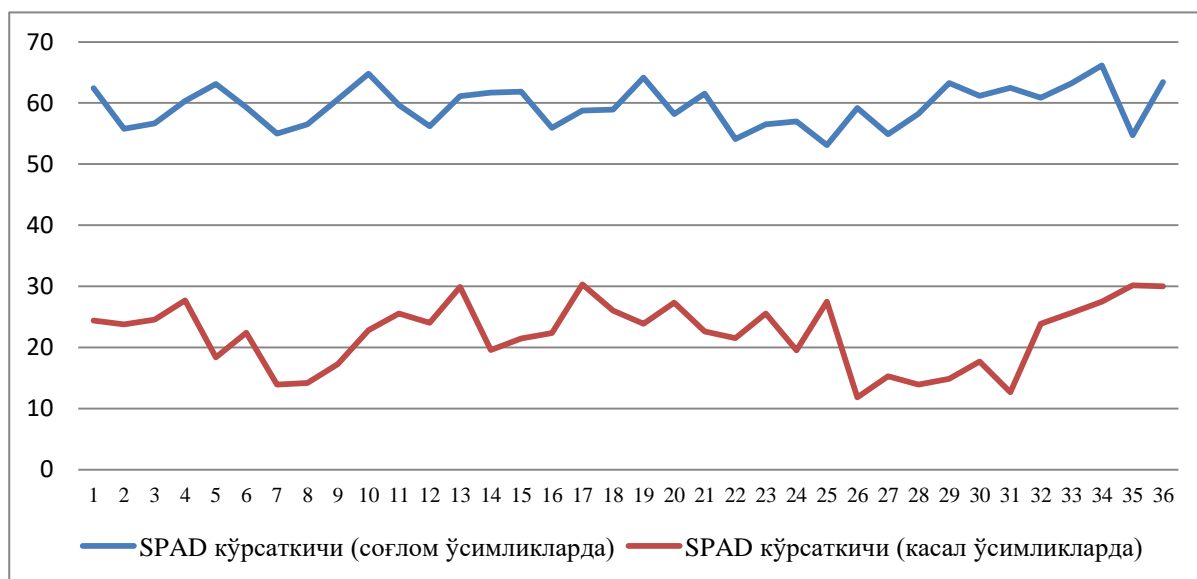
123	тўқ яшил	6,92	56,53	25,52
124	оч яшил	13,14	56,97	19,5
125	оч яшил	8,18	53,09	27,50
126	оч яшил	5,38	59,18	11,8
127	тўқ яшил	8,31	54,86	15,25
128	тўқ яшил	11,69	58,23	13,9
129	тўқ яшил	11,05	63,27	14,85
130	тўқ яшил	11,01	61,17	17,7
131	оч яшил	5,14	62,46	12,63
132	тўқ яшил	5,30	60,88	23,89
133	оч яшил	2,15	63,20	25,65
134	тўқ яшил	3,46	66,16	27,48
135	оч яшил	2,88	54,72	30,16
136	тўқ яшил	4,89	63,41	30

Кўчатзорнинг фузариум билан касалланиш даражаси К-102, К-118, К-133, К-134, К-135, К-136 намуналарида 5 % дан кам, К-105, К-108, К-110, К-113, К-114, К-117, К-124, К-128, К-129, К-130 намуналарида 10 % дан юқори, қолган намуналарда эса 5-10 % бўлиши аниқланди. Кўчатзор намуналарининг аксарият қисмида 10% гача зарарланиш зарарланиш кузатилди.

Кўчатзор намуналаридаги соғлом ва касал ўсимликларда SPAD кўрсаткичи таҳлил қилинди (2-расм). Таҳлил натижаларига кўра кўчатзор намуналаридаги соғлом ўсимликларда ўсимликларда SPAD кўрсаткичи 53,09 – 66,16 ни ташкил қилди. Бунда энг паст кўрсаткич (53,09) К-125 намунасида, энг юқори кўрсаткич (66,16) К-134 намунасида кузатилди. SPAD кўрсаткичи кўчатзор намуналарининг 19 тасида ўсимликларда 60 дан паст, 17 тасида эса 60 дан юқори бўлди. Соғлом ўсимликлардаги SPAD кўрсаткичи тўқ яшил баргли намуналарда ўртача 59,88 ни, оч яшил намуналарда ўртача 58,74 ни ташкил қилди. Касалланган намуналардаги SPAD кўрсаткичи 11,8 – 30,33 ни ташкил қилди. Бунда энг юқори кўрсаткич К-117 намунасида, энг паст кўрсаткич К-126 намунасида кузатилди. Соғлом ва касалланган ўсимликлардаги SPAD кўрсаткичлари ўртасидаги фарқ таҳлил қилинди (3-расм).



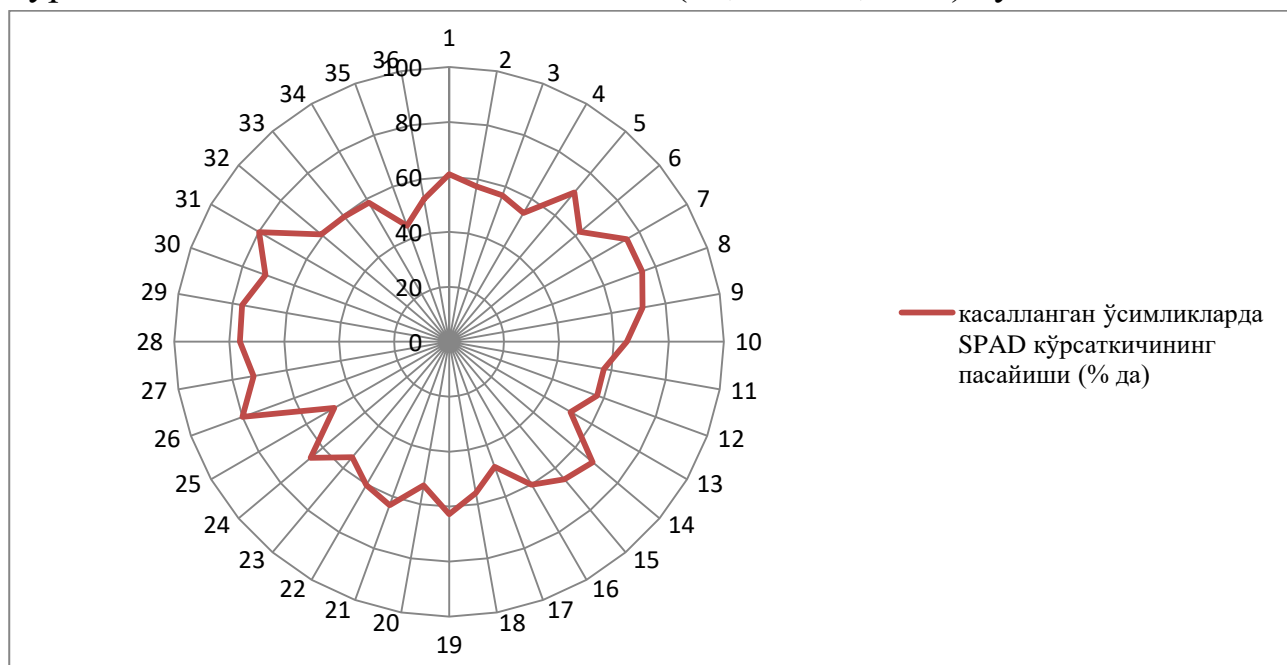
1-расм. CIENW- Халқаро элита кўчатзори намуналарининг фузариоз касаллиги билан зарарланиш даражаси



2-расм. CIENW- Халқаро элита кўчатзори намуналаридаги SPAD 502 кўрсаткичлари



Таҳлил натижаларига кўра касалланган ўсимликларда соғлом ўсимликларга қараганда SPAD кўрсаткичи 44,88 – 80,06 % гача камайганлиги кузатилди. Бунда энг кам даражадаги (44,88 % га камайган) ўзгариш К-135 намунасида кузатилди. Шу билан биргаликда ушбу намунада касалланган ўсимликлар сони ҳам кам яъни 2,88 % ни ташкил қилди. Энг юқори даражада камайиш эса (80,06 % га камайган) К-126 намунасида кузатилди. К-126 намунасида зарарланган ўсимликликлар сони кам (5,38 %) бўлишига қарамасдан, SPAD кўрсаткичи кескин ўзгарган. К-105, К-114, К-124 намуналарида касалланган ўсимликлар сони (13,1 -14,1 %) нисбатан кўп бўлиши билан биргаликда SPAD кўрсаткичининг ҳам кескин пасайиши (65,77 – 70,90 %) кузатилди.



3-расм. CIENW- Халқаро элита кўчатзори намуналарида SPAD 502 кўрсаткичининг соғлом ва касал ўсимликлар ўртасидаги фарқи (%)

## ХУЛОСА

Олинган тадқиқот натижалари шуни кўрсатдики, дала шароитида ўстирилган CIENW- Халқаро элита кўчатзори намуналарининг соғлом ва касалланган ўсимликларида SPAD 502 кўрсаткичи қиёсий таҳлил қилинди. Таҳлил натижаларига кўра, К-135 намунасида касалланиш даражаси паст, SPAD 502 кўрсаткичи ўзгариши бошқа намуналарга нисбатан барқарор эканлиги аниқланди.

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## O‘ZBEKISTON RESPUBLIKASI TOG‘-KON SANOATIDA FOYDALANILAYOTGAN TORTISH AGREGATLARI PARKINING TAHLILI

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### ANNOTATSIYA

Ushbu tadqiqot ishida sanoat sohasidagi tortish agregatlari parkining bugungi kundagi holati o‘rganilgan. Tadqiqot ishidan maqsad O‘zbekiston Respublikasi sanoat korxonalarida foydalanilayotgan sanoat tortish agregatlari parkining holati, ularning xizmat muddatlari haqida ma’lumotlarga ega bo‘lish. Bugungi kunda O‘zbekiston Respublikasi sanoat korxonalarida 70 dan ortiq PE2M, PE2U, MPE2U turidagi tortish agregatlaridan foydalanilmoqda va ularning 50% dan ortiq qismi o‘z xizmat



muddatini o‘tab bo‘lgan. Ushbu turdagi tortish agregatlaridan “Olmaliq kon-metallurgiya kombinati” AJ, “O‘zbekko‘mir” AJ korxonalarida foydalaniladi. Ushbu korxonalar yaqin kelajakda o‘zlarining sanoat tortish agregatlari parkini yangilash yoki xizmat muddatini uzaytirish yo‘li orqali mavjud parkdan foydalanishlari mumkin bo‘ladi.

**Kalit so‘zlar:** sanoat tortish agregati, PE2M, PE2U, MPE2U, sanoat tortish agregatlari parki.

### ABSTRACT

In this research paper, the current state of the fleet of traction units in the industrial sector is studied. The purpose of the research work is to obtain information about the state of the fleet of industrial traction units used at industrial enterprises of the Republic of Uzbekistan, their service life. To date, more than 70 traction units of types PE2M, PE2U, MPE2U are used at industrial enterprises of the Republic of Uzbekistan, and more than 50% of them have already fulfilled their service life. Traction units of this type are used at the enterprises of “Almalyk Mining and Metallurgical Complex” JSC, “Uzbekcoal” JSC. These enterprises will be able to use the existing fleet in the near future either by updating their fleet of industrial traction units, or by extending the service life.

**Keywords:** industrial traction unit, PE2M, PE2U, MPE2U, fleet of industrial traction units.

### KIRISH

Dunyodagi qirqdan ortiq davlat dengiz transportiga to‘g‘ridan-to‘g‘ri chiqish imkoniga ega emas. O‘zbekiston Markaziy Osiyo mintaqasidagi dengiz transportiga to‘g‘ridan-to‘g‘ri chiqish imkoniga ega bo‘lmagan davlatlar bilan chegaradoshdir. Bundan tashqari mintaqada nafaqat dengizga chiqish imkoniyatiga ega bo‘lmagan, balki dengiz yo‘llariga chiqish imkoniyatiga ega bo‘lmagan davlatlar bilan chegaradosh ikki davlatning biri O‘zbekistondir. Shu sababdan respublikamizda yuk va yo‘lovchi tashish hajmining katta ulushi temir yo‘llarning hissasiga to‘g‘ri keladi. O‘zbekiston Respublikada yildan-yilga iqtisodiy o‘shish bilan birga yuk va yo‘lovchi tashish hajmi ham ortib bormoqda, bu esa o‘z navbatida tortuv harakat tarkibini har doim soz holatda ushlab turish dolzabligini yana ham oshiradi. [6].

### ADABIYOTLAR TAHLILI VA METODOLOGIYA

O‘zbekiston Respublikasi temir yo‘llarida “O‘zbekiston temir yo‘llari” AJ dan tashqari mamlakatimiz iqtisodiyotida ishlab



chiqarish, qayta ishlash, tayyor mahsulot shakliga keltirish va transport xarajatlarini kamaytirish uchun boshqa sanoat korxonalarida ham temir yo‘l transportidan foydalanish juda muhim ahamiyat kasb etadi. “Navoiy kon-metallurgiya kombinati” AJ, “Olmaliq kon-metallurgiya kombinati” AJ, “O‘zbekko‘mir” AJ va shu kabi boshqa sanoat korxonalarida ham muntazam ravishda temir yo‘l transportidan tog‘- kon sanoatida rudalarni tashishda foydalaniladi. Sanoat korxonalarida temir yo‘l transportidan uzluksiz va xavfsiz foydalanish orqali, mahsulotlarni ishlab chiqarish ko‘rsatgichlari yildan-yilga ortib bormoqda [7, 8, 27, 25, 26].

Respublikamiz va boshqa sobiq ittifoq davlatlari temir yo‘llari tortuv harakat tarkibi parki holati bir biriga juda o‘xshashdir. Tog‘- kon sanoati rivojlangan qo‘shni Qozog‘iston, Rossiya va boshqa davlatlarda ham sanoat lokomotivlari parki eskirgan va xizmat muddatini deyarli o‘tab bo‘lmoqda [2, 3]. Bugungi kunda foydalanilayotgan texnikalarning deyarli 95 % qismi ittifoq davrida ishlab chiqarilgan [3].

Tortuv harakat tarkibi parkini yangilash sanoat temir yo‘l transportining muvaffaqiyatli ishlashining muhim shartlaridan biridir [1]. Mamlakatimizdagi tog‘- kon sanoati korxonalarini ehtiyojlari uchun so‘ngi yillarda yetarli darajada tortuv harakat tarkibi parki yangilanmadi [5, 9]. Bugungi kunga kelib o‘z temir yo‘llariga ega tog‘- kon sanoati korxonalarining tortish agregatlari parki o‘z xizmat muddatini o‘tab bo‘lmoqda. Bu esa yaqin yillarda katta investitsiyaviy harajatlarga olib keladi [4].

Ko‘pgina sanoat korxonalarini o‘zlarining lokomotiv parklarini xizmat muddatini uzaytirgan holda ta‘mirlash ishlarini olib boradilar, bu amaliyot xususiy korxonalar tomonidan tobora ko‘proq amalga oshirilmoqda [3].

Tortuv harakat tarkibining haqiqiy texnik holatini baholash va xizmat muddatini uzaytirish, uning yuk ko‘taruvchi konstruksiyalari bilan bog‘liq va ushbu muammoning texnik yechimi texnikaning yangi tayinlangan foydalanish muddati davomida xavfsiz ishlashini asoslashdan iboratdir [7, 13, 15].

Belgilangan xizmat muddatidan ortiq davrda xavfsiz foydalanish imkonini asoslash uchun me‘yoriy xujjatlarga asosan bir qator ilmiy-tadqiqotlar o‘tkazish talab etiladi [8, 12, 24, 25, 26].

Qoldiq resursini baholash vositalari sifatida zamonaviy avtomatlashtirilgan loyihalash tizimlari (CAD), kompyuterda muhandislik hisoblarini bajarish tizimlari (CAE) va texnik diagnostika qurilmalaridan foydalaniladi va natijalarga ko‘ra yakuniy xulosaga ko‘ra qabul qilinadi [8, 9, 10, 11, 14].

Qoldiq xizmat muddati tortuv harakat tarkibi strukturasi ajralmas qismi bo‘lgan, uning ishlash muddatini

belgilaydigan tayanch (yuk ko'taruvchi, asos, rama) qismlari bilan belgilanadi. Tortuv harakat tarkibining eng kichik resursga ega asosiy tayanch qismlari ularning ramasi va aravacha ramasi hisoblanadi [11, 24, 25].

### O'zbekiston respublikasi tog'-kon sanoati korxonalarida foydalaniladigan tortish agregatlari:

Bugungi kunda O'zbekiston Respublikasidagi "Olmaliq kon-metallurgiya kombinati" AJ va "O'zbekko'mir" AJ kabi korxonalarda yuklarni tashish uchun sanoat tortish agregatlaridan keng foydalanilmoqda. Ushbu korxonalarda PE2M, PE2U va MPE2U turidagi tortish agregatlaridan keng foydalaniladi [16, 24].

Ma'lumki, har bir ishlab chiqarilgan texnika vositalariga ishlab chiqaruvchi tomonidan xizmat muddati belgilanadi va shu muddat ichida ushbu texnika vositalari xavfsizlik talablari, ishonchlik va sifat ko'rsatkichlari kabi barcha parametrlarga javob berishi kerak [16].

PE2M, PE2U va MPE2U turidagi tortish agregatlarining kafolatli xizmat muddati normativ xujjatlarga ko'ra 24 yil deb belgilangan. Ushbu turdagi tortish agregatlari PE2 turidagi tortish agregati asosida ishlab chiqilgan [17, 18, 19, 20, 23].

Ushbu tortish agregatlari karyerlarda joylashgan va 1500 yoki 3000 V kuchlanishli doimiy tok bilan elektrlashtirilgan temir yo'l liniyalari uchun mo'ljallangan [17, 18, 19, 20, 23].

PE2 (*ПЭ2 — Промышленный Электровоз с 2-мя моторными думпкарами*) turidagi tortish agregati 2 ta motor dumpkar va elektrovozdan tashkil topgan bo'lib 1967-yildan 1970-yilgacha "Dnepropetrovsk elektrovozsozlik zavodi" (DEVZ) da 20 ta tortish agregati ishlab chiqarilgan [17, 18, 19, 20, 23].

1 – jadval. Tortish agregatlarining qiyosiy xarakteristikallari [18, 19, 23].

Ko'rsatkichlar	Agregat turi		
	PE2	PE2M	PE2U
Ishlab chiqarish boshlangan yil	1967 - 1970	1970 - 1985	1985 - h.v.
O'q formulasi	$3(2_0+2_0)$	$3(2_0+2_0)$	$3(2_0+2_0)$
Nominal quvvati, kVt	6120	5460	5520
Nominal rejimda tortish kuchi, kN	672	694	739
Nominal rejimda tezlik	33,4	28,9	29

### PE2M sanoat tortish agregati

PE2M turidagi tortish agregati 1970-yildan 1985-yilgacha 705 dona ishlab chiqarilgan. DT-9N turidagi dvigatel qo'llangan holda quvvati oshirilishi hisobiga modernizatsiya qilingan [17, 18, 19, 23]. *M* indeksi modernizatsiyalangan degan ma'noni anglatadi.

Ikkala turdagi agregatlarda elektrovozlarning kuzovlari bir-biridan biroz farq qiladi; farqlar elektr apparatlarining joylashuvi va o'rnatilishidagi ba'zi o'zgarishlar bilan bog'liq. Boshqaruv elektrovozi va dumpkarlarning ikki o'qli aravalarini bir-biri bilan almashtirish mumkin [18, 19, 20, 23].

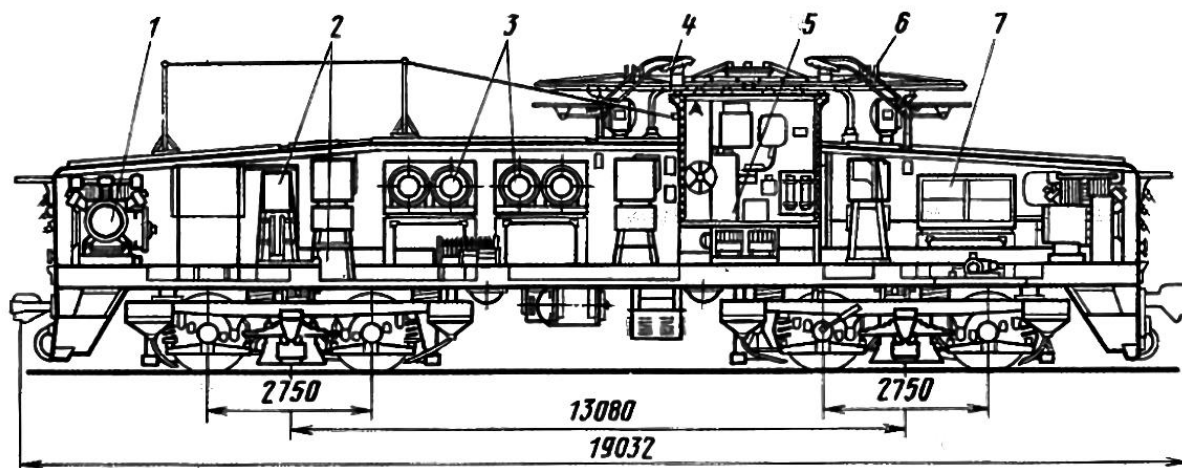
2 – jadval. PE2M tortish agregatining nominal rejimidagi parametrlari [18, 19, 23].

Kontakt tarmog'idagi kuchlanish, V	Quvvati, kVt	Tortish kuchi, kN (kgk)	Tezligi, km/s
3000	5460	680 (69 420)	28,9
1500	2570	680 (69 420)	13,6



1 – rasm. “Olmaliq kon-metallurgiya kombinati” AJ ga qarashli PE2M-328 tortish agregati.

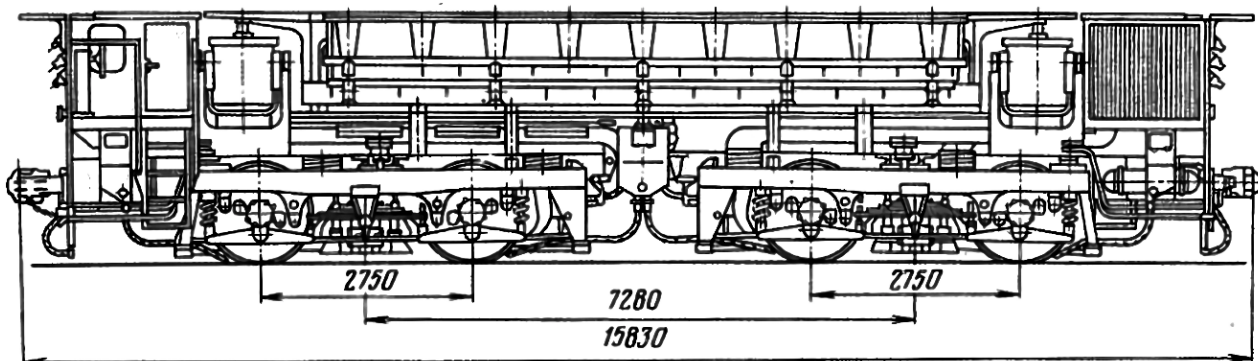
Tortish agregatining konstruksion tezligi 65 km/soat, 10 km/soat tezlikda kirishi mumkin bo'lgan egri yo'lining minimal radiusi — 80 m. Tortish agregatining boshqarish elektrovozidagi 2/3 qism qum zaxirasi bilan birgalikdagi og'irligi  $368 \pm 11$  tonnani tashkil etadi, shundan  $120 \pm 3,6$  tonna elektrovozga va  $2(124 \pm 3,7)$  tonna yuklangan ikkita motor dumpkarga to'g'ri keladi, motor dumpkarining yuk ko'taruvchanligi 45 tonna [18, 19, 23].



2 – rasm. PE2M tortish agregati boshqarish elektrovozining umumiy tuzilishi:

1 – motor-kompressor; 2 – elektr jihozlari; 3, 7 – ishga tushirish va tormoz rezistorlari;

4 – yon pantograf; 5 – mashinachi kontrolleri; 6 – markaziy pantograf



3 – rasm. PE2M tortish agregati motor dumkarining umumiy tuzilishi

### PE2U sanoat tortish agregati

“Dnepropetrovsk elektrovozsozlik zavodi” 1985-yilda PE2U deb nomlangan tajriba tortish agregatini ishlab chiqardi, *U* (*У* – усовершенствованный) indeksi takomillashtirilgan degan ma’noni anglatadi. 1985-yildan beri 174 dona ishlab chiqarilgan.

Uning PE2M agregatidan asosiy farqi 15 daqiqali va soat rejimlaridagi quvvati va tortish kuchi biroz oshirilgan (3000 V — 5520 kVt, 1500 V — 2640 kVt). Tortish agregatida NB-511 tortish elektr motorlari oʻrnatilgan.



4 – rasm. “O‘zbekko‘mir” AJ ga qarashli PE2U-034 tortish agregati.

### **MPE2U sanoat tortish agregati**

MPE2U tortish agregati yangi Yoshlik-1 konini qazib olish boshlanishi munosabati bilan “Olmaliq kon-metallurgiya kombinati” AJ buyurtmasi bo‘yicha “Tbilisi elektrovozsozlik zavodi” da (TEVZ) ishlab chiqarilgan. Ushbu agregat avvalgi PE2U agregatlaridan zamonaviyroq elektr jihozlari, bort kompyuteri, videokuzatuv kameralari, shuningdek, konditsioner o‘rnatilgan qulaylashtirilgan mashinachi xonasi bilan ajralib turadi, bu bizning mintaqamiz uchun juda muhim qo‘shimcha hisoblanadi. Konstruksion tezligi 65 km / soat ni tashkil etadi [27].



5 – rasm. “Olmaliq kon-metallurgiya kombinati” AJ ga qarashli MPE2U-001 tortish agregati.

### **Foydalanilayotgan tortish agregatlari parkining holati**

Bugungi kunda O‘zbekiston Respublikasi tog‘-kon sanoati korxonalarida jami 70 dan ortiq tortish agregatlaridan foydalanilmoqda. Quyida 3 – jadvalda O‘zbekiston Respublikasi tog‘-kon sanoati korxonalarida



tomonidan foydalanilayotgan sanoat tortish agregatlarining umumiy miqdori keltirilgan.

3 – jadval. Korxonalarda foydalanilayotgan tortish agregatlaring umumiy miqdori.

Tortish agregati turi	Miqdori
PE2M	32
PE2U	40
MPE2U	2

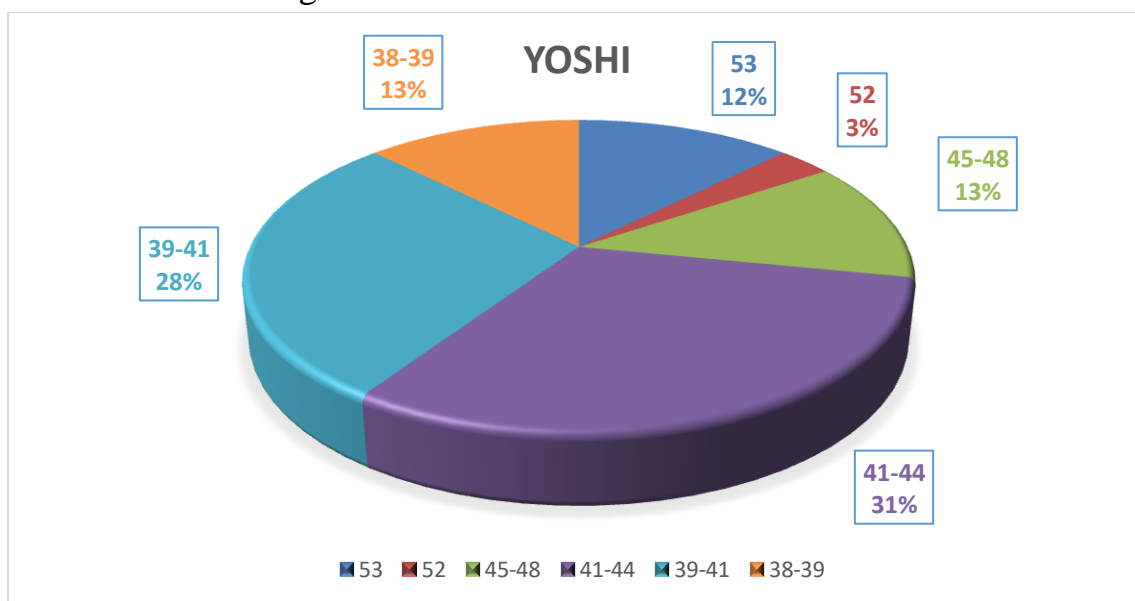
Quyida 4 – jadvalda korxonalar kesimida foydalanilayotgan tortish agregatlarining miqdori keltirilgan.

4 – jadval. Korxonalarda foydalanilayotgan tortish agregatlarining miqdori.

Korxonalar	PE2M	PE2U	MPE2U
“Olmaliq KMK” AJ	26	25	-
“O‘zbekko‘mir” AJ	6	15	2

### PE2M tortish agregatlari parkining holati

Quyida 1 – diagrammada PE2M turidagi tortish agregatlari parkining holati yoshlar kesimida keltirilgan.

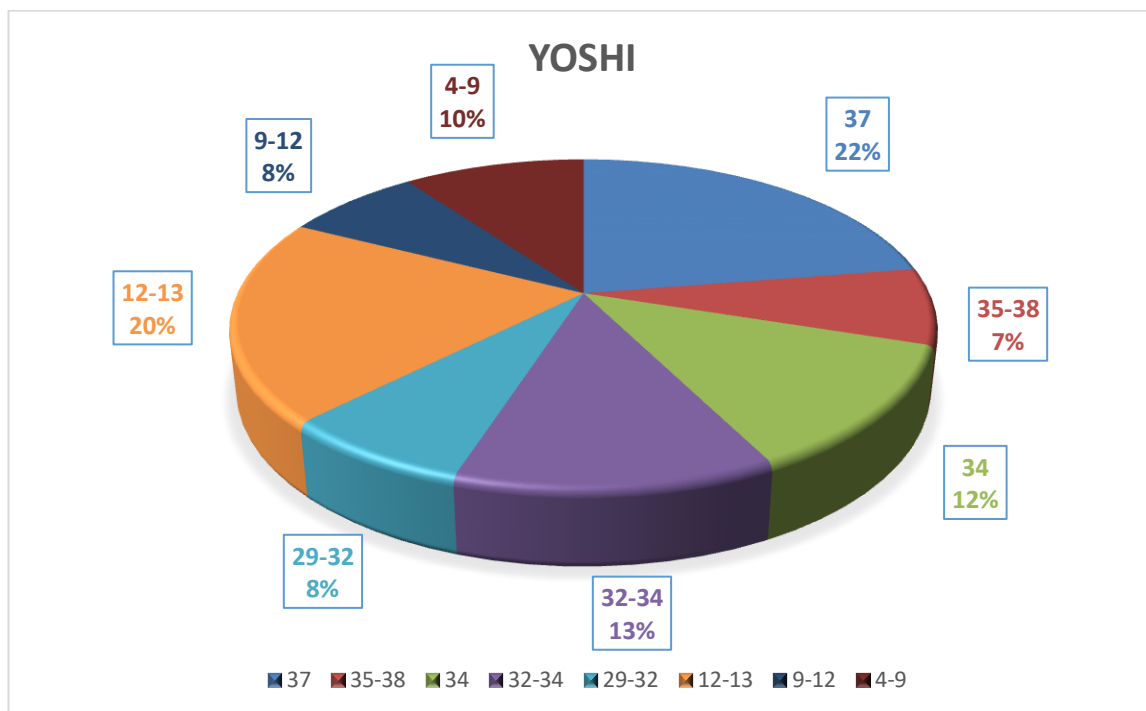


1 – diagramma. PE2M tortish agregatlari parki yoshlar kesimida.

### PE2U tortish agregatlari parkining holati

Tahlildan ko‘rinadiki PE2U turidagi tortish agregatlarining (50%)dan ortiq qismi o‘z xizmat muddatini o‘tab bo‘lgan.

Quyida 2 – diagrammada PE2U turidagi tortish agregatlari parkining holati yoshlar kesimida keltirilgan.



2 – diagramma. PE2U tortish agregatlari parki yoshlar kesimida.

## XULOSA

Bugungi kunda O‘zbekiston Respublikasi tog‘- kon sanoati korxonalarida parkida 70 dan ortiq tortish agregatidan foydalanilmoqda. Ularning 50%dan ortiq qismi o‘z kafolatli xizmat muddatini o‘tab bo‘lgan. Bu esa yaqin yillarda tegishli korxonalar tomonidan tortish agregatlari xaridi uchun katta miqdorda investitsiyalar kiritishni talab etadi.

Tajribadan ma‘lumki temir yo‘l tortish harakatlanuvchi tarkibining xizmat muddati ishlab chiqaruvchi tomonidan belgilangan xizmat muddatidan ko‘proq bo‘lishi mumkin. Bu esa yangi tortish agregatlarini xarid qilishgacha bo‘lgan vaqt davomida xizmat muddati tugagan agregatlarning xizmat muddatini uzaytirish yo‘li bilan ulardan yana foydalanish imkonini beradi. O‘z o‘rnida bu ishlar normativ hujjatlarga ko‘ra ilmiy tadqiqot ishlarini olib borishni talab qiladi va ma‘lum muddat harajatlarni tejash imkonini beradi.

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## INVESTIGATING THE IDENTIFICATION OF EFFECTIVE FACTORS IN IMPROVING SCHOOL MANAGEMENT

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### ABSTRACT

The way of leadership and management is effective in the behavior of employees, the achievement of goals and the efficiency of an office or organization. At the same time, the effectiveness of management depends on the personality and management characteristics of the manager. The main goal of this research is to identify effective factors in improving school management. The importance of this research is that with its results, it is possible to help school administrators to have effective management and with proper management, they can provide a better educational situation for students in schools. The data collection in this research article was done by the qualitatively library research.

The findings of this research showed that, in general, two general factors play a role in the effectiveness of school management, which are: the manager's personality characteristics and management skills.

The personality characteristics of the manager are generally divided into three parts, which are: the physical and mental characteristics of the manager including: physical and mental health, and the power of thinking, understanding, and having appropriate morals and behavior, maturity characteristics of the manager including education, his experience, and the characteristics of the manager's power, i.e., how the manager uses power, including the power of reward, the power of coercion, and the power of law.

Another factor that plays a role in the effectiveness of school management is having management skills that managers have skills in the fields of creating a suitable work environment, making employees aware of educational goals, creating a sense of interest and attachment of employees towards their work; They should also be skilled in managerial duties such as needs assessment, planning, organizing, recruiting, and monitoring and controlling.

**Keywords:** manager, management, schools, effectiveness.



## Introduction

There is no doubt that the way of leadership and management is effective in the behavior of employees, the achievement of goals and the efficiency of an office or organization. Realizing and achieving the goals of the administration depends on the personality traits and skills of the manager. Managers are moderators and work leaders. If they are not aware of management principles and technology, they cannot solve the problems of their administration. The need for this technology is felt in school management more than any other offices because school is a place of learning and education and a human-making factory. If the schools are managed correctly, it will harm the society and its individuals, therefore, it seems necessary to identify the factors that are effective in school management and improve school management. Recognizing these factors to create a good working environment, to initiate innovation, positive changes, will help the school managers to increase the effectiveness of the lesson and improve the school situation.

The goals of this research are to identify effective factors in improving school management.

Research questions:

- Who is the manager? And what is management?
- Which characteristics should school managers have to have effective management?
- What skills should school administrators have to manage educational activities in the best possible way and improve the education process in schools

## Importance of the Research

The importance of this article is that its contents have been obtained from reliable scientific sources and have been prepared and arranged in the form (direct, indirect, and summarizing) that require library research. At the same time, the research in this case seems important because its results can be used to help school managers to have effective management. This is certain that the effectiveness of management has helped in improving the condition of schools and as a whole teaching and learning process that is the main goal of school administration is also influenced by school management and the quality of education will also be affected and improved.

## Materials and Research Methodology

The collection of information in this research, due to time constraints, lack of facilities and budget, which forced the scholar from doing field research, made him to research from the library with a qualitative method, which was done according to Hafez Nia's point of view. To collect information from the library, Hafez Nia has mentioned a study slip in his book: It is the paper and cardboard that the researcher finds the content or text that is related to the research problem as a source of study and notes or pastes on it. The content that the researcher records or remembers in the form may be the same (direct quotation) or based on the researcher's perception and understanding of the material (in the form of indirect quotation), it may be translated from another language or summarized. In this method, after completing his information in the field of research, the researcher arranges and organizes the material and writes the result of his research (Hafez Nia, 2013: 205).

### **Findings**

Now that the objectives, questions, importance and method of research have been determined in this research, we will discuss the main content (answers to the same questions) that have been proposed before.

### **Who is the manager? And what is management?**

Different definitions of manager and management have been given by scientists, and here it is enough to present one definitions.

**Definition of manager and management:** A manager is the one who is responsible for directing and leading an organization or department. We can say that a manager is a person who creates coordination between different parts of human and material powers to achieve the goals of the organization.

Management is the action of the manager, which can be defined as follows: It is the science and art of creating coordination between material and non-material resources in the organization to guide the group towards the goals and achieve them, with the highest level of efficiency. (Hassanzadeh, 1401: 30)

### **Effective factors in school management**

Two general factors play a role in the effectiveness of school management: the manager's personality characters and management skills, each of these two factors has its own smaller components, which are described below:

### **A - Manager's personality characters**



One of the factors that plays a major role in the effectiveness of the manager's work is the personality characteristics of the school manager, which can be generally divided into three parts: the physical and mental characteristics of the manager, the maturity characteristics of the manager, and the characteristics of the manager's power.

### **1- Physical and mental characteristics of the manager**

In the section of physical and mental abilities, the following can be mentioned:

#### **1- Managerial physical health**

One of the factors that makes the manager's management effective is the physical health of the manager or leader which they must be in good health to be able to perform their duties well; Because a disabled or a sick person who always suffers from his illness or disability cannot succeed in the decisions and solving the problems of the school, which relies more on the intellect and intellectual power of the principal, because common sense is in a healthy body.

#### **2- Manager's mental health**

Another factor that plays a role in the effectiveness of the manager's work in the school is the mental health of the manager. The mental health of the manager is far more important than the physical health of the manager. Because managers who do not have mental health make life bitter and unpleasant not only for themselves, but also for everyone around them, and cause discomfort, discouragement, depression, and aggressive behavior of people, also cause disruption of the order of the work environment and disorder in behavior. This situation affects and slows down the work and activities of the administration, also has unwanted effects on the learning process of the students. (Sultani, 1400: 195).

#### **3- Manager's emotional health**

Another factor effective in school management is the emotional health of school administrators. In fact, emotion creates qualitative aspects of life and behavior, which has a great impact on the success of people and causes repulsion and attraction of people. School principals should not suffer from emotional disorders and become emotional too soon; Rather, the manager should not be so emotional that the others take advantage of his situation, also should not be so heartless that they break the relationship with colleagues. On the other hand, the lack of emotional health of the principal in the school causes the

lack of interest in work and the lack of work of teachers and other employees in the school (Shams, 2016: 140).

#### **4- Mental health and power of thinking and understanding**

High thinking and understanding power are the basic logic of effective management. Therefore, school administrators must have common sense to think logically and consider different dimensions of a problem. Identifying the problem and finding the right solution for it, is a task that requires high intelligence and understanding power. So, managers will be successful in their management work if they have this feature (Shams, 2016: 111).

#### **5- Ethics and appropriate behavior**

The advantage of good ethics in school management is of great importance; Because every human being is evaluated according to the degree of emergence of moral values in his thoughts, speech, and behavior. The first manifestation of a person in society is his morals. So, we can say that school principals not only play a major role in the orderliness of schoolwork, but as role models, they influence the behavior of other office employees, including teachers, students, etc. School principals who act as role models cannot have effective school management if they do not have good morals. Because the lack of good ethics in leadership and management has deprived the teachers and other educational employees of trust and confidence in him, in which case some of the principal's orders have been disobeyed and causes chaos in the school. On the other hand, the atmosphere of cooperation, relationships and mutual respect between school principals, teachers and other employees have been lost, causing the disintegration of school administration order (Lutfabadi, 2016: 238).

#### **2- Maturity characteristics of managers**

One of the effective factors in advancing and applying the work of school management is having maturity characteristics. The maturity characteristics of a manager means reaching the stage of maturity; in addition to physically reaching the stage of maturity, the manager must achieve this maturity in terms of education, experience, emotions, etc. Maturity characteristics of managers include the following:

##### **1- Having knowledge**

Having knowledge here does not mean only being literate; if this was meant, every teacher would have the blessing of literacy and would be able to carry out the task of managing the school well. Rather, managers should have three types of

knowledge (general knowledge, specialized knowledge, and managerial knowledge) so that they can perform proper and effective management.

For this reason, general knowledge is important for school managers so that they can understand social, moral, ideological, religious, and economic issues related to their work. Specialized knowledge for managers is very important in improving the quality of their work. Specialist managers who manage their specialized department can understand and raise the problems and needs of that department in a professional manner; For example, if a person is specialized in the military sector, even though they are literate and knowledgeable; they cannot have proper management in the field of education and training because the management of education requires the identifying of requirements of the education. Also, school managers must have management understanding of the duties and responsibilities of an officer and to know which responsibilities and duties a manager is responsible for to handle them (Alegheh Band, 2014: 89).

## **2- Experience**

Experience is also one of the characteristics of human maturity, which has been necessary in managerial work and activities, and is very important for the advancement of management. Because research has shown that the individual who has not experience in administrative work if they are recruited directly after the becoming specialist will not be successful in work and management programs. They may do things that will be difficult to compensate for in the future. So, school management needs an experienced person more than any other management. Because the director of a school with many people such as the teachers, students and other administrative employees of the school, which is certain that such an office with such a population needs an experienced person to manage the school in an effective manner (Azizi, 2016: 215).

## **3- The ability to recognize, judge and make decisions to solve problems**

Correct diagnosis is the prelude to correct judgment and decision making. This characteristic also depends on the knowledge and experience of managers. As much as knowledgeable and experienced a manager is, he would be equally successful in identifying problems, judging and making decisions, and solving problems, which is one of the important tasks of management.

### 3- Characteristics of the manager's power

The third characteristic related to the personality characteristics of the principal is the use of power tools that are available to the principals and affect the work of school management quantitatively and qualitatively. Knowledgeable and experienced managers can use those tools skillfully in their administration. This power tool includes the following:

#### 1- Reward power

The use of this rewarding power in the school can keep the motivation and activity of every member of the school alive, such as head teachers, teachers, students, and other administrative and service employees of the school, and it plays a role in the mobility of every member of the school. When school administrators do justice in rewarding and praising every member of the office who has done the most and best work and activity, it would be very effective in managing the school.

The use of this authority has a positive effect on the activities of school employees in two ways. In one aspect, a person who is praised or rewarded is encouraged and the motivation for work and activity increases in him and makes this person do his work and activities better than before. On the other hand, when this mentality is found among the school members that the manager praises and commends the person who has really done his work well and there is no prejudice and discrimination in this field, healthy competition will be created between the employees. This method of competition, in addition to creating good relations, love and intimacy between employees, it causes better performance in the school (Shariatmadari, 2013: 239 and 324).

#### 2- The power of coercion

Another tool that managers can use to improve the work performance of employees in an office is the power of coercion. The use of coercive power can be used by school administrators in situations where teachers and administrative staff of the school refuse to comply with the rules and do not do the work they are responsible for or are absent from duty. Then the managers can use this source of power with its hierarchy to order the administrative and work affairs in the form of specifying the presence of the violator, deduction of salary, conversion and dismissal. In this way, people obey out of fear and do not fail in doing their work, and improvement in the work of the administration can be seen (Alagheh Band, 2014: 145).

### 3- The power of law

Another tool that managers use to improve the work and activities of the department is the power that the law has given to the manager. In every country, there are principles and rules for work, and the managers are the implementers of these rules and can use these principles and rules for a better order of work and activities of the office and force the employees to obey the law and deal with the violators legally. It is certain that there are principles and rules for human education in the formal education of every country, and the implementation of these principles and rules by the school principal can play a significant role in the effectiveness of management work in the school and can make the education and learning of students more qualitative.

### B- Management skills

As we mentioned above, two general factors play a role in effective school management, one of which was the manager's personality traits that were discussed. The second characteristics of general effective factors in the school management is to have management skills.

#### 1- Skills in creating a suitable working environment

One of the effective factors in the effectiveness of the activities of the office staff is the manager's skills in creating favorable and suitable working conditions. Employees want a job that has suitable and favorable conditions; has a democratic environment in which compassion, philanthropy, social justice equality, a pleasant work environment in which they could feel comfortable and be a useful member. School administrators can create a green and clean environment in the school that has clean classrooms, and assign teachers based on their capacity and abilities in the classes and topics (subjects) for teaching. By doing this, the managers should provide suitable working environment so that they get encouraged to their works.

#### 2- Skills of making school employees aware of educational goals

One of the effective factors in creating effective management in the school is the skill of the manager, in informing the school staff, including teachers, students, administrative and service employees, of educational and educational goals. Being aware of the goals of each work has a great impact on creating more motivation and mobility, planning, choosing the way and the methods to reach the goal. When the goal of educational and training activities is clear for every teacher, student, and administrative and service staff of the school, they can

think better about the educational and training goals that are the common goal and try to achieve it.

On the other hand, being aware of the educational and training goals gives the employees the feeling that they are involved in determining the policy of the school's activities and feel responsible in the effort to realize the school's plan and consider themselves partners in the results of the goals. This awareness can be done through radio and television, publications, installing and publishing posters on the walls of schools, conferences and creating a committee in this field (Hassanzadeh, 1401: 134).

### **3- Skills creating feeling of interest of employees towards their work**

One of the factors playing a role in improving management work is the manager's skills in keeping the employees' interest alive. Work and activities in the school are effective when every member of the school has interest towards their duties and work. Interest in work is created when managers respect the rules in dividing tasks and expect everyone according to their knowledge and experience, determine the duties of employees according to their physical and professional abilities, their mistakes should not be regarded as a sin; rather, they should take lessons and experience from it, so the mistakes should not be repeated. Another thing that is very important in this field is that the managers should not discriminate, because discrimination is completely contrary to the expectations of honest services. Therefore, do not destroy the work motivation of the employees by making unnecessary distinctions. They should try to make the relations between the employees friendly and mutual respect.

Skills of the principals that play a role in the effectiveness of schoolwork and the achievement of educational goals are skills in the dimensions of the principal's duties, which rely on the managerial knowledge of principals. If the school administrators have skills and knowledge in this field, they can improve the school's work and increase the quality of education in the school.

### **Conclusion**

From the topics of this article, it can be concluded that school leadership and management play an essential role in the quality of teachers' work and students' learning. The success rate of school managers depends on two general factors, which are the manager's personality traits and management skills. If the school principals have problems in terms of personality traits or do not have the

necessary skills mentioned in this article, then they cannot bring positive and effective changes in improving the administrative, curricular and order situation of schools, to ensure quality education, which is the main goal of the school. The following suggestions will help in improving this situation.

School administrators should appoint teachers to teach subjects in classes with the principle of meritocracy and distribute duties and privileges with fairness and create a suitable work environment for teachers and other employees so that every member of the school is satisfied with their work and duties.

School principals should not neglect their managerial duties and perform their activities with a regular planning in various fields such as finance, human resources, development, etc., so that the needs of human resources can be taken care of in a timely manner. To not disturb their work and activities.

School principals should try to consult with other teachers and employees in the major and basic tasks of the school. On the one hand, consultation makes them choose the best ways to do the work, and on the other hand, every member of the department considers themselves involved in this decision and tries to achieve that goal.

School managers should monitor and control the educational and work activities of teachers and other school employees on a daily basis should and advise them on their work problems.

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## AIR POLLUTION (CASE STUDY OF KABUL'S ATMOSPHERE POLLUTION)

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### ABSTRACT

Air pollution is one of the major environmental issues. It causes severe health effects and problems such as cancer, cardiovascular diseases etc. Kabul city, Afghanistan's capital with 4,860,880 populations is one of the polluted cities of the world. In this article, we deal with the primary and secondary pollutants, acid rain, its effects and the factors which are mainly responsible for these pollutants. The main air pollutant of concern is suspended particles, smog and the gases creating acid rain. Kabul has hundreds of thousands of cars and generators and the Residents burn wood, tire, and coal, which releases dangerous gases to the atmosphere and lack of green space also takes part in polluting the atmosphere. If the weather gets polluted like this, the deaths rate which is because of the air pollution will increase rapidly.

**Keywords:** primary and secondary pollutants, smoke, fossil fuels, photochemical smog.

### Introduction

The primary components of pure dry air are nitrogen  $N_2$  (72%), oxygen  $O_2$  (20.9%), argon (0.9%), and carbon dioxide  $CO_2$  (0.035% or 350 ppm). Water vapor is present in amounts which typically range from 0.5 to 3% at ground level, depending on temperature and relative humidity.

Analysis of air samples reveals the presence of hundreds of other substances in trace amounts (Harrison, 1999:35). In urban environment, there are pollutant compounds emitted to the atmosphere directly and these are called primary pollutants. However, many compounds react in the atmosphere, the products of such reactions are called secondary pollutants.

Urban pollution is largely the product of combustion processes. In ancient times cities experienced pollution problems due to wood smoke. However, it was the



transition to fossil fuel burning that caused the rapid development of air pollution problems.

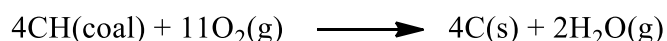
Fuels usually consist of hydrocarbons, and normal fuel combustion is an oxidation reaction and can be described:



This would not seem an especially dangerous activity as neither  $\text{CO}_2$  nor water is particularly toxic. However, let us consider a situation where there is not enough  $\text{O}_2$  during the combustion, i.e., as might occur inside an engine or boiler. The equation might now be written:



Here, we have produced carbon monoxide ( $\text{CO}$ ), a poisonous gas. With even less oxygen we can get carbon (i.e., smoke).



At low temperatures, in situations where there is relatively little  $\text{O}_2$ , pyrolysis reactions may cause a rearrangement of atoms that can lead to the formation of polycyclic aromatic hydrocarbons during combustion. The most notorious of these is benzo[a]pyrene; a cancer-inducing compound.

Besides  $\text{CO}_2$  not being poisonous,  $\text{CO}_2$  by dissolving in water makes it slightly acidic. However, some parts of the atmosphere, as shown below, are polluted with gases such as sulfur dioxide and nitrogen dioxide from combustion of impurities in fossil fuels. When these gases dissolve in rainwater, they make rain even more acidic, creating acid rain. When acid rain falls on statues made of limestone in the rock and erodes it. Limestone corrodes and stains when exposed to acid rain. Acid rain can be natural where volcanoes erupt or plants decompose, both release carbon dioxide gas, which makes rainwater acidic. But it is more potent when caused by human pollution activities. Industrial plants such as power stations pump large amounts of gases, such as sulfur dioxide, into the atmosphere. Acid rain reacts with metals, rock, and other materials. This damages and erodes buildings made of these material and acid rain is poisonous to plants. Acid rain damages leaves, reducing the rate of photosynthesis and reduces root growth, preventing the absorption of nutrients. It lots of acid rain falls in rivers or lakes, it raises the acidity of the

water. Most animals can't survive in acidic conditions (Saunders, 2020:256).

In addition to these, contaminants within the fuel can also cause air pollution. The most common and worrisome impurity in fossil fuels is Sulphur (S), partly present as the mineral pyrite, FeS. There may be as much as 6% Sulphur in some coals, and this is converted to SO<sub>2</sub> on combustion. SO<sub>2</sub>, as mentioned above is one of the very serious air pollutants which makes the atmospheric water acidic and causes lots of damage to many things.

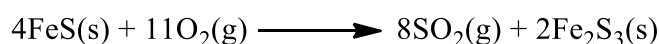


Table 1 Sulphur contents of fuels

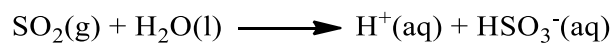
Fuel	S (% by weight)
Coal	7.0 – 0.2
Fuel oil	4.0 – 0.5
Coke	2.5 – 1.5
Diesel fuel	0.9 – 0.3
Petrol	0.1
Kerosene	0.1
Wood	Very small
Natural gas	Very small

There are other impurities in fuels too, but Sulphur has always been seen as most characteristic of the air pollution problems of cities.

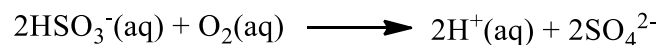
If we look at the composition of various fuels (Table 1), we see that they contain quite variable amounts of Sulphur. The highest amounts of Sulphur are found in coals and in fuel oils. These are the fuels used in stationary sources such as boilers, furnaces (and traditionally steam engines), domestic chimneys, steam turbines and power stations. Underdeveloped countries, Afghanistan which is one the underdeveloped countries, uses coals and fuel oils among others for the purpose of creating energy in various forms. Thus, the main source of Sulphur pollution, and indeed smoke, in the urban atmosphere is the stationary source. Smoke too is mainly associated with stationary source.

Classical air pollution incidents (usually) occur under damp and foggy conditions in winter. The presence of smoke and fog together led to the invention of the word smog (sm[oke and f]og), now often used to describe air pollution in general.

Sulphur dioxide is soluble so could dissolve into the water that condensed around smoke particles (Andreas et al., 2004: 46-48). Global dimming, a serious air pollution is one of the air pollution problems of Kabul city also. Tiny pollutant particles that are released into the Earth's atmosphere block the Sun's light. Over time, this has led to less light passing through the atmosphere, especially in cities and industrial areas, leading to global dimming (Saunders, 2020:255).



Traces of metal contaminants (iron (Fe) or manganese (Mg)) catalyzed the conversion of dissolve  $\text{SO}_2$  to  $\text{H}_2\text{SO}_4$ .



Sulphuric acid has a great affinity for water, so the droplet absorbed more water. Gradually the droplets grew, and the fog thickened, attaining very low pH values.

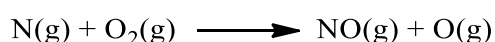
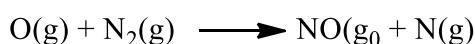
The transition to petroleum derived fuels this century has seen the emergence of an entirely new kind of air pollution. This newer form of pollution is the result of the greater volatility of liquid fuels. The motor vehicles are such an important consumer of liquid fuels that it has become a major source of contemporary air pollution. However, the pollutants responsible for causing the problems are not themselves emitted by motor vehicles. Rather, they form in the atmosphere. These secondary pollutants are formed from the reactions of primary pollutants, such as NO and unburnt fuel, which come directly from the automobiles (Andreas et al., 2004: 46-48).

Photochemical smog also called oxidizing smog, is a big problem in big cities like Los Angeles, California, and in many cities around the world (e.g., in Tokyo, Paris, and Mexico City) and now it has taken the Kabul city. Smog cause eye irritation and lung damage; they can also have severe agricultural effects.

To make Photochemical smog, we need four things: Warm air, moist hotter than 290 Kelvins ( $63^{\circ}\text{F}$ ), lots of intense sunlight (hv), a lot of hydrocarbons and  $\text{NO}_x$  which usually means lots of cars and stable air masses, a city surrounded by walls of mountains (Hites 2007: 88).

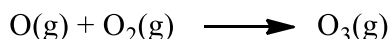
Kabul, the capital of Afghanistan is surrounded by mountains and has hundreds of thousands of cars which emits dangerous gases to the atmosphere. It has a moistened weather and lots of sunlight which the requirements of the air pollution.

The fact that we burn the fuels, not in O<sub>2</sub>, but in air has important consequences. At the high temperatures, in a flame, molecules of air may fragment, and even the relatively inert nitrogen molecules can undergo reactions:

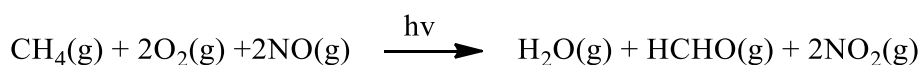


Once an oxygen atom is formed in a flame, it will be regenerated and contribute to a whole chain of reactions that produce NO. In addition, some fuels contain nitrogen compounds as impurities, so the combustion products of these impurities are a further source of nitrogen oxides (i.e., NO<sub>x</sub>, the sum NO and NO<sub>2</sub>).

This equation gives an isolated and reactive oxygen atom, which can react to form O<sub>3</sub>:



Ozone is the single pollutant that most clearly characterizes photochemical smog, and it is a secondary pollutant. The volatile organic compounds released through the use of petroleum fuels serve to aid the conversion of NO to NO<sub>2</sub>. The reactions are quite complicated, but the simplified one is:



We can see in the reaction that the automobile hydrocarbon is oxidized to an aldehyde (formaldehyde, HCHO). Aldehydes are eye irritants, at high concentrations, also carcinogens. This equation simply shows the net reactions in photochemical smog (Andreas et al. 2004: 50).

Pollutant particles in the air are toxic and can cause long-term health problems. They are dangerous because they are colorless, odorless, and typically can't be seen. They can impair our breathing and poison our blood. They may also darken buildings, block machinery, and some are flammable, presenting a fire risk. Hemoglobin is a protein in human blood that binds to oxygen which we

breathe in, carrying it around our bodies. Carbon monoxide molecules also bind to hemoglobin, preventing it from carrying enough oxygen and causing us to feel drowsy, become unconscious, or even die.

## Results and discussion

Smoke smudges Kabul's sky Jan. 6. For Weeks, a toxic haze has blanked the city as cold as air traps pollution caused by people burning coal, wood, car tires, garbage and whatever they could find to stay warm (Horton 2019). The city covers an area size 1,023 square kilometers (395 sq. mi), which it is by far the largest city in the country, Afghanistan and it has 4,860,880 populations, 4,141,880 of the city's populations live in the city (Estimated Population of Afghanistan 2018-19) which are 669,602 families (Estimated Population of Afghanistan 2018-19).

Kabul's population has tripled over the past decade, and the capital buzzes with Soviet-era cars emitting thick plums of exhaust gases. Apartment buildings and the factories send columns and blankets of coal Smoke into the air, which grows even smoggier in winter as temperatures decreases and residents crank up their furnaces (Horton 2019).

It is estimated that, there are more than 5,000 vehicles in Kabul city, increasing year by year and is responsible for more than 36 per cent of Kabul city's air pollution (Shefayee 2019). There are millions of generators which are contributing to the air pollution of the city. Almost 40 per cent of the shops use generators for electricity purpose.

Ghulam Mohammad Malekyar, technical assistant to the Afghan Environmental Protection Agency says that 85 per cent of Kabul city's vehicles are over 15 years old and about 60 per cent of them have to leave the cycle. These cars are very old and need to be repaired in order to not participate in the air pollution of the city.

Lack of green space is another cause of Kabul city's pollution (Husaini 2019). Ahmad Oryakhel, a deputy head of the Kabul Municipality, says that there were only 7 to 8 thousand trees after the Taliban collapsed in Kabul, but now more than 300 million trees in Kabul have been planted for flooding and urban purification (Husaini 2019). However, these trees (in most cases) are covered with dust and dirt which prohibits the Sun's light from reaching the leaves and slows down its growth rate. Hundreds of these trees die because of dust covering their

leaves and prohibiting them to grow and eventually the trees die (Saunders, 2020:254).

### Conclusion

Air pollution is one of the sever problems of the cities which are caused by man-made activities. Kabul, Afghanistan's capital, is one of the polluted cities of the world and the main source of pollution is caused by the actions and behaviors of the city's residents. Because of lack of electricity, hundreds of thousands of electricity generators are turned on daily in order to generate electricity. The residents also burn anything they can get to make their houses and places warm in the cold winters which make the atmosphere more and more polluted. The city's pollution can be decreased and reduced by the following cases:

1. Preventing from importing of the nonstandard fuels and prohibiting from the use of unauthorized fuels and brining of tires and coal. A lot of low quality and nonstandard fuels are imported to the country which causes asever and major problems of the air pollution and problems to the population of the country and especially in the city of Kabul, Afghanistan.

2. Most of the city's auxiliary roads are not asphalted and hence whenever the weather is rainy and snowy, cars and vehicles bring mud and clay to the main streets of the city; In this way the weather could become dusty. Dust and dirt are a major pollution problem in Kabul city and by asphaltting the streets, this problem could be solved.

3. By providing solar cells for electricity generating purpose which by reducing the use of generators, it helps in decreasing and reducing the pollution. The government could apply a limit in the use of generators for producing electricity and could encourage the population in order to use the solar energy and even offer some help and loans for them to use the solar energy instead of generators.

4. Planting the fields by plane-trees which grow faster than the cypress tress helps in controlling the air pollution. Trees absorbs the huge amounts of dust and dirt and through this dust and particulates which are one of the major contributors of the pollutants of the city gets cleaned and therefore, several problems are eliminated or at least reduced.



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## PREVALENCE OF PREMATURE RUPTURE OF MEMBRANE IN PREGNANT WOMEN

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### ABSTRACT

When spontaneous rupture of the amniotic membrane occurs before the beginning of the birth, it is called Premature Rupture of Membrane (PROM). if membrane rupture occurs after 37 weeks' gestation before the onset of labor, it is called Term PROM. And if it happens before 37 weeks, it is called Preterm Prom. If this happen 24 hours before birth, it is called Prolonged Premature Rupture of Membrane. The main purpose of the study is to find the Prevalence, causes and complications of PROM as well as witch group of women's are more susceptible to the disease in Afghanistan.

**Material and Methods:** this is cross-sectional study , conducted in Gynecology ward of Nangarhar University Teaching Hospital's from (23/9/2022-22/12/2022) on women who were admitted to this ward for childbirth .Data was collected using a structured questionnaire..

**Findings:** Premature Rupture of Membrane was observed in156 among the total 3481 population of Mother the main related risk factor was Multiparity and by large amount was acure in Full term pregnancy and large amount of them gave NVD. The main causes or PROM was Genital tract infection and the main second causes was UTI

**Conclusion:** The disease occurs in about 10% of all pregnancies. Therefore, it is necessary to recognize this type of pregnancy early to prevent maternal and fetal complications like premature birth, risk of ascending infections (Chorioamnionitis) especially if birth does not take place within 24 hours, as well as abruption of placenta, Oligohydrominiosis, Cord prolapsed, Prematurity and neonatal sepsis.

**Keywords:** Prevalence of Premature Rupture of membrane, Complications and Etiology.

## Introduction:

If spontaneous Rupture of the amniotic membrane occur before the beginning of labor it is called premature rupture of the membrane. [4] The Prevalence of the PROM is high and cause more morbidities and mortalities in both mother and fetus. Globally PROM occur in 10% of pregnancies. so it is necessary to identify such pregnancies in time to prevent maternal and fetal complications. common complications of PROM are premature delivery, ascending infections (Chorioamnionitis) especially if labor doesn't occur within 24 hours, cord collapse, oligohydramnios, abruption of placenta.[5,6]

In management these women are recommend bed rest, evaluate the fetus and the mother time to time, if the duration of pregnancy is more than 37 weeks, we make a comprehensive birth plan and give induction, and if necessary KB5/ Antibiotics such as ampicillin, amoxicillin, and erythromycin should be given until delivery, and if the pregnancy period is less than 37 weeks, corticosteroids should be given for fetal lung maturity and prevention of hyaline membrane disease.[2,8] A cross-sectional study conducted in Mainland China in five specialized and one general hospital on 29,143 pregnancies was conducted in a period of five years from Jan 2003 to 2007-December. The incidence of PROM was 19.53%, the incidence of still birth among the PROM were 30.1%, neonatal death 17.8%, 62.5% neonates were suffering from pulmonary hypoplasia witch was the major cause of neonatal death. [11]

In a study conducted in the United States the incidence of neonatal death among PROM was 11.6%, RDS 15.1%, assist ventilation 25.9%, neonatal seizure 0.2%. In another cross sectional study that was conducted in 7 Agaries hospital in Egypt from July 2019-January 2020, which included 69 mothers with PROM. As a result, there were 46 women who delivered normal children with a good Apgar score (66.75%), 15 children needed oxygen (21.7%) and 8 children needed ventilator support (11.06%) and 8 mothers had past history of PROM (11.6%), 6 had multiple pregnancy (8.7%), 16 had an infection (23.2%), 12 had an antepartum Hemorrhage (17.45%) and 12 had chronic diseases (17.4%).[16] in a cross sectional study conducted between 5 July 2021-30 Aug. 2021 in Ambotown Hospital, Ethiopia the incidence of prom was 22.6%. [15]

Regarding the selection of research topic, we discussed with senior professors of Nangarhar medical faculty, study deferent articles in the same topic and we take benefit from library and web site of higher education of Afghanistan.

**Objectives:**

1- **Primary:** To identify the prevalence of PROM.

2- **Supportive:** to study causes of PROM, method of delivery, indication of C/S in these patients, evaluation of these pregnancies and comparison with other global journals.

**Review of the medical literature:**

When spontaneous rupture of the amniotic membrane occurs before the beginning of the birth, it is called Premature Rupture of Membrane (PROM). If membrane rupture occurs after 37 weeks' gestation before the onset of labor, it is called Term PROM. And if it happens before 37 weeks, it is called Preterm Prom. If this happens 24 hours before birth, it is called Prolonged Rupture of Membrane <sup>(2)</sup>. The disease occurs in 10% of all pregnancies <sup>(9)</sup>. The exact cause is not known but the incidence of the PROM is high in following conditions: increase susceptibility of membrane to rupture, increase extensibility of membrane, polyhydramnios, incompetence of cervix, multiple pregnancy, infections (like Chorioamnionitis, UTI, infection of the lower genital tract) <sup>(3)</sup>. The diagnosis is made by the drainage of fluid from the vaginal canal and accumulating in the posterior fornix, but it can be confused with hydorrhoea of pregnancy and urinary incontinence. To confirm the diagnosis of PROM following tests or advised;

1- Speculum examination: in this test the drainage of amniotic fluid from cervix can be seen clearly.

2- Nitrozin test: A special paper that contains nitrozin is placed in accumulated fluid in the posterior fornix. If the yellow color of the paper changed to blue, it confirms the presence of amniotic fluid (the PH of amniotic fluid is alkali <sup>(3,4)</sup>).

3- Ferning test: vaginal secretions are examined under microscope <sup>(2)</sup>.

4- Ultrasound: determines the amount of amniotic fluid and condition of fetus.

5- Lab investigation: complete blood count, urine culture and analysis, microscopic examination and culture of vaginal swab and echocardiograph for the evaluation of fetal condition.

**Risks:** If membrane rupture occurs near to term the risks increase however, if membrane rupture occurs early the chance of premature delivery increases. PROM increases risk of ascending infections (Chorioamnionitis) especially if rupture occurs 24 hours before delivery, premature cord prolapses, oligohydramnios, abruption of placenta and neonatal sepsis. <sup>(5)</sup>

**Management:** Only the speculum examination is not sufficient for the diagnosis, the condition of the cervix should also be examined, and to avoid repeated vaginal examinations, the

patient should be advised to rest completely, and a sterile vaginal pad should be placed until fluid leakage is observed <sup>[5]</sup>. Then the following situations should be taken into consideration: age of the fetus, whether mother is in labor or not, presence of evidence of sepsis, mother's pulse, temperature and FHR should be assessed every 4 hours <sup>[3]</sup>

**Term PROM:** If the mother is not in labor and there is no evidence of infection or fetal distress, she should be admitted to the hospital and kept under observation. In 90% of cases, spontaneous labor starts after 24 hours, but if it doesn't start in 24 hours, induction with oxytocin is performed, which can only be performed if its indicated <sup>[2]</sup>.

**Preterm PROM:** In this case, it is important to prevent infection. These patients should be managed in a well-equipped hospital. If gestational age is 34 weeks or more, death of the fetus due to prematurity is less common <sup>(7)</sup>. Depending on species of infection, labor starts spontaneously within 48 hours, if not it can be induced by oxytocin. If GA is less than 34 weeks, the patient must be treated conservatively <sup>[1,2]</sup>. Prophylactic antibiotics such as Ampicillin, Amoxicillin, and Erythromycin can be given until delivery, Corticosteroid is given to prevent RDS in neonate <sup>[3,5,6]</sup>.

A cross-sectional study conducted in Mainland China in five specialized and one general hospital on 29,143 pregnancies was conducted in a period of five years from Jan 2003 to 2007-December. The incidence of PROM were 19.53%, the incidence of still birth among the PROM were 30.1%, neonatal death 17.8%, 62.5% neonates were suffering from pulmonary hypoplasia which was the major cause of neonatal death <sup>(9)</sup>. In a study conducted in the United States the incidence of neonatal death among PROM was 11.6%, RDS 15.1%, assist ventilation 25.9%, neonatal seizure 0.2%. In another cross sectional study that was conducted in 7 Agaries hospital in Egypt from July 2019-January 2020, which included 69 mothers with PROM. As a result, there were 46 women who delivered normal children with a good Apgar score (66.75%), 15 children needed oxygen (21.7%) and 8 children needed ventilator support (11.06%) and 8 mothers had past history of PROM (11.6%), 6 had multiple pregnancy (8.7%), 16 had an infection (23.2%), 12 had an antepartum hemorrhage (17.45%) and 12 had chronic diseases (17.4%). in a cross sectional study conducted between 5 July 2021-30 Aug. 2021 in Ambotown Hospital, Ethiopia the incidence of prom was 22.6% <sup>(18)</sup>. Regarding the selection of research topic, we discussed with senior professors of Nangarhar medical faculty, study deferent articles in the same topic and we take benefit from library and web site of higher education of Afghanistan.

This is a cross-sectional study conducted in the Department of Obstetrics and Gynecology at Nangarhar University Teaching Hospital during the period of three months (1/7/1401-1/10/1401) on all the patients who were admitted for childbirth. All patients are registered, a complete history is taken, and then a physical examination is carried out. diagnosis is made after ultrasound and laboratory tests. After that, PROM patients are excluded from all patients. The data are Analyzed by SPSS.

### **Material and methods**

This is a cross-sectional study conducted in the Department of Obstetrics and Gynecology at Nangarhar University Teaching Hospital during the period of three months (23/9/2022-22/12/2022) on all the patients who were admitted for childbirth. All patients are registered, a complete history is taken, and then a physical examination is carried out. diagnosis is made after ultrasound and laboratory tests. After that, PROM patients are excluded from all patients. The data are Analyzed by SPSS.

### **Inclusion criteria:**

- 1-all women who suffer from PROM.
- 2-all women with PROM and had a normal vaginal delivery.
- 3-all women with PROM and had cesarean suction.

**Exclusion criteria:** All women who had PROM but gestation age was less than 20 weeks.

### **Limitation:**

Since our country Afghanistan has been struggling with civil wars for the past three decades, it is clear that our country has been affected by these wars and is facing economic, health, transportation, scientific and social problems. The biggest impact has been shown in the field of health. The health services are not reaching the people properly due to the lack of security in the rural and remote areas of our country, i.e. the lack of health personnel and health clinics, which is itself a threat to people's lives. Mothers do not attend regular ANC visits and do not visit the hospital for delivery, or these patients may not register or agree to the study, all of which create limitations in the study.

### **Conclusion:**

This is a cross-sectional study in which the patients who were admitted in Nangarhar Teaching Hospital's Obstetrics and Gynecology Department for childbirth. Ultrasound and laboratory tests are performed to diagnose their pregnancy and a questionnaire is filled out from them. The data were collected by specialist and trainee doctors, on duty doctors and midwife of gynecology and obstetrics department of Nangarhar University

teaching hospital and organized by assist prof drs Noreena Kamawal. The data analysis, literature review and discussion and correction was done by assistant Prof Suhaila Rahimi and assistant Prof Ahmad Gul Azami. Results of the study are summarized in the following tables and graphs.

Table-1: number and percentage of PROM in pregnant women in 3 months admitted in NUTH

Pregnant woman	Number of woman under study	Percentage of woman under study
Without PRO	3481	95,71%
With PROM	156	4,28%
Total	3637	100%

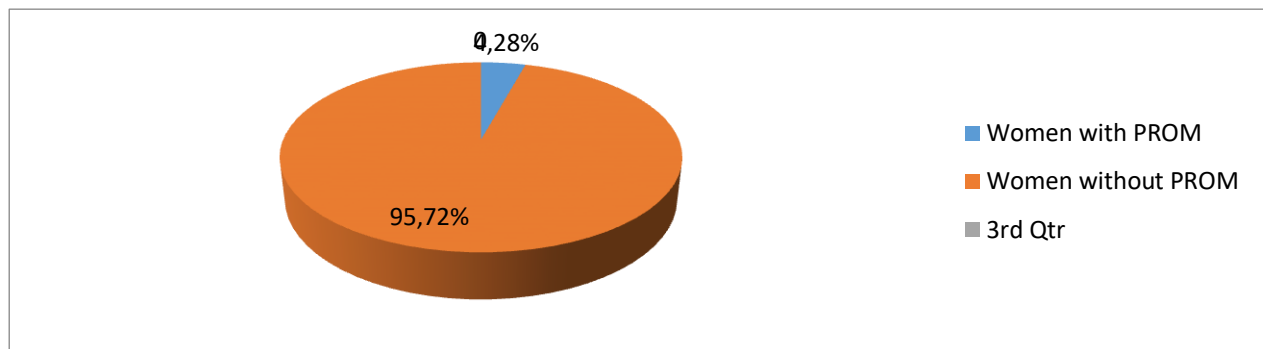


Table 2: Number and percentage of mothers with PROM according to parity.

Woman with PROM	Numbers	Percentage
Primigravida	60	38,46%
Multigravida	96	61,53 %
Total	156	100%

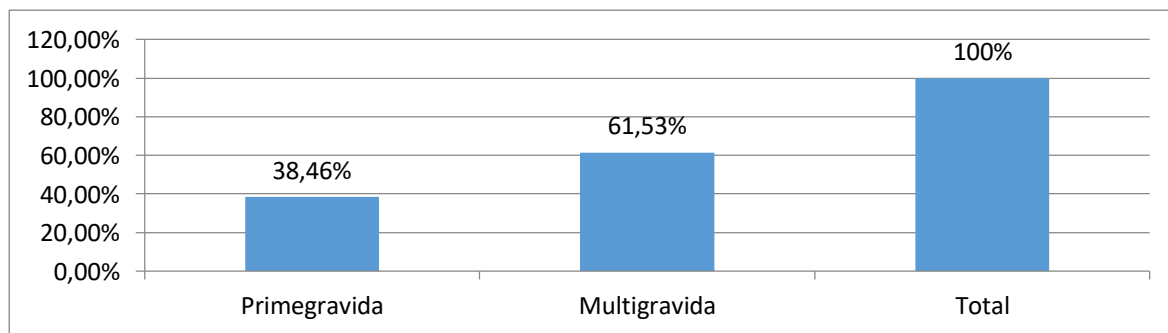


Table 3: Number and percentage of mothers with PROM according to gestational age.

Gestational Age	Number	Percentage
25 Weeks	3	1,92%
26Weeks	1	0,64%
30 weeks	5	3,20 %
32 Weeks	4	2,56%
34 weeks	2	1,28%

35 Weeks	10	6,41%
Full term pregnancy	131	83,97%
Total	156	100%

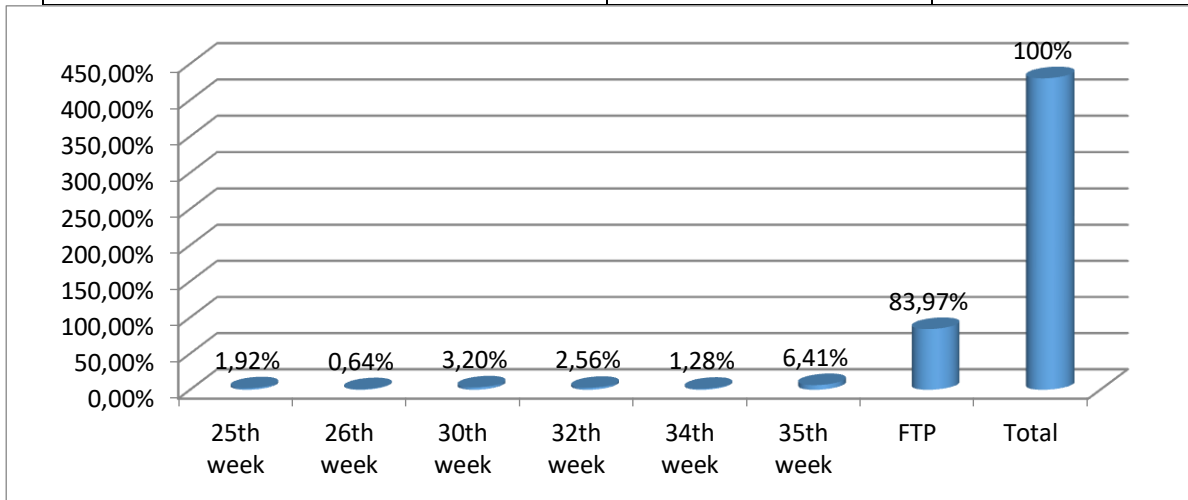


Table 4: Number and percentage of mothers with PROM according to delivery type.

Kind of Delivery	Number	Percentage
NVD	136	87,17%
C/S	20	12,8%
Total	156	100%

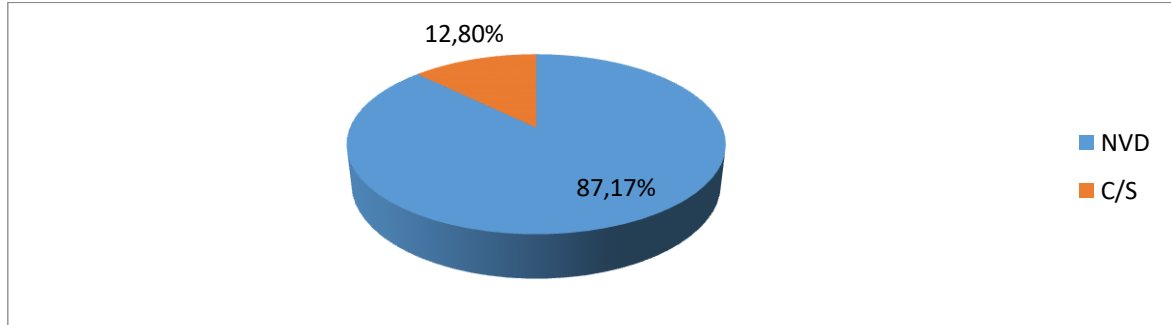
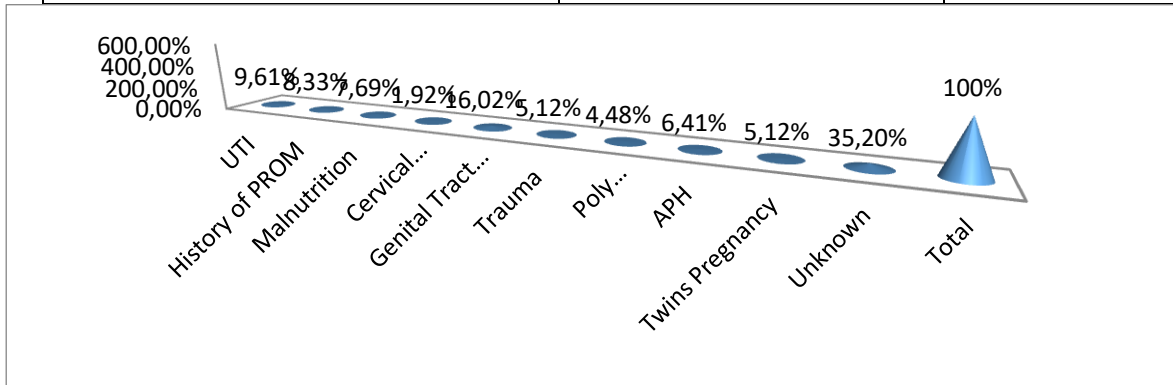


Table 5: Number and percentage of mothers with PROM according to etiology.

Risk factor of PROM	Number	Percentage
UTI	15	9,61%
History of PROM	13	8,33%
Malnutrition	12	7,69%
Cervical incompetency	3	1,92%
Genital tract infection	25	16,02%
Trauma	8	5,12%
Polyhydramnios's	7	4,41%
APH	10	6,41%
Twins	8	5,12%

Unknown	55	35,25%
Total	158	100%



**Discussion:**

Rupture of membranes before birth is risky for both mother and child, which is a major cause of disability and death of the mother and the fetus. In this study conducted in NUTH (23/9/2022-22/12/2022) we achieved such a result that in these three months, 3,637 patients were admitted to the hospital for delivery, among these patients 156 were suffering from PROM (4.28%). From this group, 60 women (38.46%) were primigravida and 96 women (61.53%) were multigravida.

According to gestational age, the number of mothers who were 25 weeks pregnant were 3 (1.92%), mothers who were 26 weeks pregnant were 1 (0.64%), mothers who were 30 weeks pregnant were 5 (3.20%), there were 4 (2.56%) mothers who were 32 weeks pregnant, 2 (1.28%) were 34 weeks pregnant. Those who were 35 weeks pregnant were 10 (6.41%), those who were full-term were 131 (83.98%) of all PROM patients.

According to the type of birth 136 mothers (87.17%) were those who had normal births and 20 mothers (12.8%) were those who had C/S. Finally, in terms of causes, 15 mothers (9.61%) had UTI, 13 mothers (8.33%) had post history of PROM, 12 patients (7.69%) had malnutrition, 3 patients (1.92%) had cervical insufficiency, 25 mothers (16.02%) were those who had genital tract infection, 8 patients (5.12%) had PROM due to trauma, 7 patients (4.48%) had polyhydramnios, 10 patients (6.41%) had APH, 8 (5.12%) patients had twin pregnancy and 55 (35.25%) patients who had PROM with unknown cause.

Table 6: Our study is somewhat different from other countries that is mentioned in table 6.





Patient don't have PRO	Patient with PROM	Total no of pat	Parameters
(95.71%)3481	156(4.28%)	3637	Our study
	19.53%	29143	China
(95.71%)3481	156(4.28%)	3637	Our study
	22.6%		Ethiopia
<b>C/S</b>	<b>Normal vaginal delivery</b>	<b>PROM</b>	
(12,8%)20	(87.17%)136	156	Our study
	66.57%	69	Egypt
<b>Egypt</b>	<b>Our study</b>		<b>Risk factors</b>
19.6%	(8.33%)13		Hx of PROM
(8.79%)6	(5.12%)8		Twins pregnancy
(23.2%)16	(16.02%)25		Infections
17.45%	(6.41%)10		APH
17.4%	(35.25%)55		Others

### Suggestions:

1- As PROM causes major problems in both mothers and their fetus, it is necessary to all young doctors and health care workers to have enough information about the disease.

2- All health centers should have laboratory tests such as Hb, Rh factor, Blood group, Coombs test, Hct and ultrasonography facilities.

3- In all MCH centers, regular and accurate examinations should be carried out during the antenatal period, so that some infections or the conditions that causes PROM can be prevented.

4- By organizing seminars and workshops young doctors should be given information about PROM.

5- With the help of radio, television, internet sites, magazines and other news sources, all mothers should be informed to visit the clinic for prenatal check-ups and do all the necessary tests.

6- Health funding agencies are requested to increase the quantity and quality of laboratories in hospitals to carry out accurate and advanced tests.

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## Placenta Previa Pregnancy Outcomes

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### ABSTRACT

When the placenta is implanted partially or completely over the lower segment (over or adjacent to internal os), it is called placenta Previa several demographic factor may contribute to the higher risk of placenta Previa first maternal age increase placenta Previa, multiparty also elevated risk for the placenta Previa. Cigarette smoking increased relative the risk of placenta Previa at least two-fold. For clinical purpose, the placenta type is divided in minor degree (type I and type II) and major degree (type III and type IV).

**Methodology:** This is a hospital based prospective research that has been conducted during 1/7/1401 – 29/12/1401 in Nangarhar university teaching hospital Obs/Gyn ward. In this research, we had included all the pregnant women with gestational age of > 28 weeks that were hospitalized due to either parturition or obstetrical complication and having placenta Previa, on the other Words, we excluded all the women with multiple pregnancies and having placenta Previa

**Main objective:** We aimed to evaluate the placenta Previa pregnancy outcomes

**Supportive objective:** To find out the cause of placenta Previa

**Results:** A total of 7848 pregnant women were hospitalized in Nangarhar university teaching hospital during our research period. among this population 26 pregnant women were suffering from placenta Previa, the mean age of these women was approximately 25-35 years, and most of these women were multipara. According to the causes of placenta Previa, two patients had one scar of C/S, six patients had two scars of C/S and 4 Patients had the past surgical history of miscarriage and the remaining 14 patients had not a clear past surgical history on the uterus.

**Conclusion:** As far as total placenta Previa is associated with some life threatening fetal and maternal complications, so these women must be hospitalized in advanced health centers for better health services, some of these complications are curable so women must routinely go to health centers for antenatal care visits to prevent the occurrence of further complications.

**Keywords:** placenta Previa, maternal outcome, fetal outcome, emergency cesarean hysterectomy.

**Main objective:** We aimed to evaluate the placenta Previa pregnancy outcomes

**Supportive objectives:** to find out the cause of placenta Previa

### **Introduction:**

Maternal and fetal morbidity and mortality from placenta Previa is considerable and associated with high demands on health care resources, because Placenta Previa can cause severe hemorrhagic bleeding during the pregnancy or/and at the time of delivery[1] It can be one of the obstetrician's worst nightmares which are associated with severe maternal morbidity and one of the major causes of maternal death.[2]

When the placenta is implanted partially or completely over the lower segment (over or adjacent to internal os), It is called placenta Previa .1/3 cases of antepartum hemorrhage belong to placenta Previa. It is found 80% in multipara women. The placenta Previa incidence increased by age, parity but till now the exact cause of this pregnancy late complication is not clear [3]

It is one of the major causes of antepartum hemorrhage, which complicates two to five percent of the pregnancies. The incidence of placenta Previa is approximately 4-5 per 1000 deliveries[4] several demographic factor may contribute to the higher risk of placenta Previa first maternal age increase placenta Previa, multiparity also elevated risk for the placenta Previa. Cigarette smoking increased relative the risk of placenta Previa at least two-fold. Incidence range is 0,3 % or one case per 300 or 400 delivery .[5]

Chances of postpartum hemorrhage in cases of Placenta Previa are high as lower uterine segment fails to contract resulting in bleeding from sinuses of placental bed. Use of utero tonics, suturing of bleeding sinuses, stepwise revascularization, internal iliac artery ligation, balloon catheter and failing all hysterectomy are used to control bleeding[6]

Depending on the degree of extension the placenta on the lower segment of the uterus it has four types of depending. [7]

Grade I: the majority placenta part implant in upper segment lower adage reach to the lower segment but not up to internal os (low laying)

Grade II: the lower edge of placenta Previa reach to the internal os but not covered it. (Marginal placenta Previa)

Grade III: lower edge of placenta partially covered the internal os (partial placenta Previa)

Grade IV: The placenta is completely lay in the internal os, it means placenta completely covered, even after the fully dilatation of the cervix. (Complete or total placenta Previa).

For clinical purpose the placenta type is divided in minor degree (type I and type II) and major degree (type III and type IV).

Placenta migration: in most of cases placenta at 17 weeks of gestation reach or cover the internal os in about 10 % of cases repeated ultrasound showed no placenta cover the lower segment. [6]

Placenta Previa and coexistent accrete syndrome both contribute substantively to maternal mortality and morbidity rate, maternal mortality rate increased three-fold for women with placenta Previa, in another report of placenta Previa 5367 maternal death in USA 2006 to 2013 placenta Previa alone accounted for near 3 % for the death. preterm delivery continues to be major cause of the perinatal death. in delivery with placenta Previa in USA 1997 the neonatal mortality rate three fold than un effected pregnancy [8]

The association of growth restriction with placenta Previa is likely minimal after controlling for gestation age in a population based on cohort study of more than 500,000 singleton birth and Associated complications in 2001 the results shows that most low birth weight infant associated with placenta Previa result from the preterm birth [4]. In 2010 Harper and coworker reported similar finding of cohort study of near 87000 women in contrast at least two studies reported a greater risk for fetal growth restriction [9]

Placenta at time confused with other causes of bleeding occurring in later month of pregnancy like abruption of placenta.

The most common complications of the placenta Previa are antepartum hemorrhage, Premature Rupture of Membrane, atony of uterus, adherent Previa, mal presentation and Preterm Labor. [10]

### **Methodology:**

This is a hospital based prospective research that has been conducted during 1/8/1401 – 29/12/1401 in Nangarhar university teaching hospital Obs/Gyn ward. In this research we have

included All the pregnant women having placenta Previa with gestational age of > 28 weeks that were hospitalized due to either parturition or obstetrical complication and, on the other hand we excluded all the women with multiple pregnancies and having placenta Previa. Among all the participants only 26 of them were diagnosed with placenta Previa with the incidence of 3%. The target women were firstly registered and then a specific obstetrical history file was filled, in this specific obstetrical file, We have mentioned all important data regarding our research such as identification of the patient, first day of last menstrual period (LMP) which is important for determining Gestational age and number of deliveries. After completing history, the physical examination of abdomen of each participant has been performed by a Obs/Gyn specialist and ultrasonography was performed for the purpose of fetal wellbeing and placental location. After all these examinations, a specific questionnaire was filled from the women having placenta Previa. The questionnaire contains All the important data that was required for our research. The women having placenta Previa were under observation before and after parturition. We have the permission of the ethical committee of the Nangarhar university teaching hospital and we have also the patient verbally consent for conducting our research. Finally, we analyzed our data and result in SPSS 23 version.

### Results:

A total of 7848 pregnant women admitted during our research to Nangarhar university teaching hospital Gyn /Obs ward, among this population, 26 pregnant women were documented for placenta Previa, the mean age of these women was approximately 25-35 years and most of the women were multipara, 15.38. % Were primi para and 84. 66% women were multipara.

According to the causes of placenta Previa two patients had one scar of Caesarea section (C /s), six patients had two scars of C/s and 4 Patients had the past history surgical treatment of miscarriage and the remaining 14 patients have not had a clear past surgical intervention history on the uterus

Type of surgical intervention	Cases of placenta Previa
One scar of Previous C/s	2
Two scars of previous C/s	6
Dilatation & curettage	4

The high incidence age group for occurring placenta Previa is 25-35 years old noted in our research, It means by increasing the age the incidence of placenta Previa also increased.

Age group (in years)	Cases of placenta Previa
≤ 25	6
25-35	15
> 35	8

As you know placenta has four types so according the clinical types of placenta Previa, the percentage of marginal placenta Previa (type II) was 3.8%, partial placenta Previa (type III) was (26.9%) and complete placenta Previa or (type IV) was 69.20 %.

According the gestation age 34.6% pregnant women gestation age was less than 34 weeks, 46.1% mother's gestation age was 34-37 weeks and 19,23% pregnant women gestation age was more than 37 weeks of gestation.

Gestational age ( in weeks)	Cases of placenta previa
< 34	9 (34.6%)
34-37	12 (46.1%)
> 37	5 (19.23%)

20 women have been brought to the hospital with Antepartum Hemorrhage, most of the women were informed during antenatal care period that they were having placenta Previa, only 6 women were not received any ante natal visit.

According to the type of delivery most of the women (19) delivered their babies through operative delivery and the reason was highly dependent on the type of placenta Previa and the severity of the signs and symptoms and fetal condition. 6 women with placenta Previa type III and IV were also suffering from life threatening signs and symptoms.

Type of placenta Previa	Cases of placenta Previa
Type I	0 (low laying)
Type II	1 (Marginal) (3.8%)
Type III	7 (partial) (26.9%)
Type IV	18 (total) (69.20%)

PPH has been reported in 6 women and 1 woman has gone under caesarean hysterectomy due to placenta Accreta, BT of 1-2



unit has been performed for 22 patients, one of them was gone under caesarean hysterectomy with 4 units. Blood Transfused.

Amount of BT	Cases of placenta previa
1-2 units	22
> 2 units	1

Most of women that were having placenta Previa and registered themselves or have been performed their subsequent antenatal care visits already know about the course and prognosis of their pregnancy complications. and they arrived to near health center for urgent management of their bleeding,

According to the newborn results the APGAR score of the 1<sup>st</sup> minute was 6-9 and the APGAR score of 5<sup>th</sup> minute was 7-9, two of the newborns delivered with IUGR, one of them was stillbirth and 21 newborns were delivered prematurely.

Fetal findings	Cases of placenta Previa
APGAR score in 1 <sup>st</sup> minute	6-9
APGAR score in 5 <sup>th</sup> minute	7-9
IUGR	2
Stillbirth	1
Prematurity	21 (80%)

### Discussion:

A total of 7848 pregnant women admitted during our research to Nangarhar university teaching hospital Gyn /Obs ward, among this population 26 pregnant women were documented for placenta Previa, the mean age of these women was approximately 25-35 years and most of the women were multipara, according to the causes of placenta Previa two patients have one scar of C/s, six patients have two scars of C/s and 4 Patients have the past history surgical treatment of miscarriage and the remaining 14 patients have not has a clear past surgical intervention history on the uterus.

The high incidence age group for occurring placenta Previa is 25-35 years old noted in our research .15.38. % were primi para and 84. 66% women were multipara. According the clinical types of placenta Previa, the number of marginal placenta Previa (type II) was 3.8%, partial placenta Previa (type III) was (26.9%) and complete placenta Previa or (type IV) was 69.20 % .34.6% pregnant women gestation age was less than 34 weeks, 46.1%

mother's gestation age was 34-37 weeks and 19, 23% pregnant women gestation age was more than 37 weeks of gestation.

20 women have been brought to the hospital with Antepartum Hemorrhage, most of the women were informed during antenatal care period that they were having placenta Previa, most of them came to the hospital for selective C/s. only 6 women were not received any antenatal visit.

According to the type of delivery most of the women (19) delivered their babies through operative delivery and the reason was highly dependent on the type of placenta Previa and the severity of the signs and symptoms and fetal condition. 7 women with placenta Previa type I and II were also suffering from life threatening signs and symptoms.

PPH has been reported in 6 women and 1 woman has gone under caesarean hysterectomy due to placenta Accrete.

BT of 1-2 unit has been performed for 22 patients, one of them was gone under caesarean hysterectomy with 4 units. Blood Transfused. 4 women don't need for blood transfusion.

According to the newborn outcome in placenta Previa, our results showed the APGAR score of the 1<sup>st</sup> minute was 6-9 and the APGAR score of 5<sup>th</sup> minute was 7-9, two of the newborns delivered with IUGR, one of them was stillbirth and 21 newborns were delivered prematurely. The frequency of placenta Previa is estimated 3% in Obs/Gyn ward.

Feto maternal Outcome with Placenta Previa and Morbidly Adherent Placenta, A Cross Sectional Study was conducted in Department of Obstetrics and Gynecology, Pak Red Crescent Medical and Dental College (PRCM&DC) Hospital Lahore from June 2017 to June 2019. A total of 62 pregnant women were registered in total, 62 patients with PP were identified 22.58% patients with morbidly adherent placenta were unhooked and other wise are booked. 61.2% patients were the age group between 20-30 years and remaining are more than 30 years. In 25.8% type IV placenta Previa and same 25.8% are morbidly adherent placenta and remaining are type I, II & III PP. Placenta Previa, only 6.45% cases were diagnosed in 2nd trimester and 93.5% cases were diagnosed in 3rd trimester.

A prospective study was conducted in our tertiary care hospital on 78 patients in order to know the cause and outcome of placenta Previa. Out of 78 patients registered in the study, 44 (56.4%) had minor degree of PP while 34 (43.6%) had major degree. Majority of patients (91%) were in the age group 21-30 years. The mean age in present study was 26

$\pm 3.3$  SD. According to the gravidity, it was observed that 38.5% were prim gravid and 61.5% were multigravida. 53.9% patients were delivered after 37 weeks of gestation, 37.2% between 34–37 weeks and 8.9% before 34 weeks of gestation. Mean gestational age at the time of delivery was found to be  $36.9 \pm 2.7$  SD in present study. 83.3% cases had cephalic presentation at the time of delivery.

Early termination was carried out in major PP group due to APH. 13 out of 17 patients presenting with APH had major degree of PP. Abnormal lie and presentation are commonly seen in cases of PP however cephalic constituted 83.3% cases of fetal presentations in present study followed by breech 10.2%, oblique 3.9%, face 1.3% and transverse 1.3%. In this study, 92.2% neonates were born alive while neonatal death and intrauterine death (IUD) were observed in 5.2% and 2.6% neonates respectively.

- Clinical study of placenta Previa and its effect on maternal health and fetal outcome Department of Obstetrics and Gynecology, Bangalore Medical College and Research Institute, Bangalore, Karnataka, India Total 106 pregnant women with placenta Previa were analyzed between January to December 2015. After applying the inclusion and exclusion criteria these women were analyzed with respect to their age, parity, gestational age and clinical features at presentation, history of warning bleeding, duration of hospitalization, need for blood transfusion, period of gestation at delivery, route of delivery and ICU admissions. For the newborn APGAR score, birth weight, need for NICU admission, still birth rate, neonatal mortality rate is noted down. In this study 0.64% of the deliveries were complicated with placenta Previa among them 23.6% women were above 30 years of age and 80.2% were multigravidas. 60.4% had major degree placenta Previa, 36.8% had prior cesarean deliveries, 7.5% had prior abortion, 39.7% preterm deliveries. 85.8% cases delivered by cesarean delivery, 12.7% cases had postpartum hemorrhage and 4.7% had adherent placenta. There were 86.8% ICU admissions, 3.8% cases of acute kidney injury.

The numbers in our research in most conditions is similar to those of other countries. The fact that occurrence of Placenta Previa in pregnant women is a little bit higher and it is due to the lack of availability of advanced health center in Nangarhar Jalalabad city. Most of these pregnant women refer to these two or three advanced centers in eastern region, and due to high number of these women occurrence of Placenta Previa goes high. On the other hand, from the time the (CTG) is used for assessment of fetus in our ward, the number of operational deliveries went high too. As it is mentioned before that one of the causes of Placenta Previa is having of caesarian section scars.



### Conclusion:

As far as total placenta Previa is associated with some life threatening fetal and maternal complications so these women must be hospitalized in advanced health centers for better health services, some of these complications are curable so women must routinely go to health centers for antenatal care visits to prevent the occurrence of further complications.

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## ЃЎЗА НАВЛАРИДА ТОЛА СИФАТИ БЕЛГИЛАРИНИНГ ИРСИЙЛАНИШИ ВА ЎЗГАРУВЧАНЛИГИ

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### АННОТАЦИЯ

Ѓўза навлари дурагайларида солиштирма узилиш кучи белгиси бўйича ўзгарувчанлик диапазони ушбу навларнинг тола типига боғлиқлиги йўқлигига қараб, бу белги бўйича  $F_2$  дурагайларидан бошлаб рекомбинантларни ажратиш имконини беради.

**Калит сўзлар:** ғўза, нав, дурагай, тола, сифат, солиштирма узилиш кучи, рекомбинант, ўзгарувчанлик.

### ABSTRACT

On the basis of the absence of a relationship between the range of variability according to specific breaking load traits of fiber in hybrids of cotton varieties with the type of fiber of these varieties, it was revealed that the beginning of selection for these characters starting from  $F_2$  offspring makes it possible to isolate valuable recombinants.

**Keywords:** cotton, variety, hybrid, fiber, quality, specific breaking load, recombinant, variability

### КИРИШ

Дунё қишлоқ хўжалигида ғўза энг муҳим техник экинларидан бири ҳисобланиб, у асосан толаси учун етиштирилади. Ѓўза дунёнинг 36 градус жанубий кенглик ва 48 градус шимолий узунликдаги тропик ва субтропик ҳудудларда жойлашган 97



та мамлакатда етиштирилади. АҚШ қишлоқ хўжалиги вазирлигининг маълумотларига кўра, 2018-2019 йилларда дунё бўйича пахта ҳосили 27,3 млн тоннадан кўпроқни ташкил этган. АҚШ, Хитой, Хиндистон каби дунёдаги энг йирик мамлакатларнинг иқтисодиёти ўз ривожланишидаги ютуқларга асосан пахта толасини ишлаб чиқариш ва қайта ишлаш ҳисобига эришган [1]. Пахтачилик соҳасида *G.hirsutum* L. турига мансуб тезпишар, ҳосилдор, зараркунанда ҳашоратларга ва ташқи муҳитнинг стресс омилларига чидамлиликнинг генетик имкониятларига эга бўлган ҳамда тола сифати юқори бўлган ғўза навларини яратиш бир қатор долзарб муаммолар ечимини топишда муҳим ўрин тутади.

Тола-ғўза ўсимлигининг саноат учун асосий хом ашёси ҳисобланади. Саноатга эса тола сифатли, ҳар-хил кўрсаткичлари бўйича талабгир бўлиши керак, лекин бу борада талайгина муаммолар мавжуд. Бу кўп жihatдан навга боғлиқ бўлса, шу билан бир қаторда уни етиштириш ва сифатли қилиб ўз вақтида йиғиб териб олишга ҳам боғлиқдир. Жаҳон пахта селекцияси дастурларининг асосий мақсади-ҳосилни ошириш ва тола сифатини яхшилашдан иборатдир. Ғўза навлари фақат деҳқончилик талабларигагина эмас, шунингдек энгил саноатимизнинг ҳамда дунё бозорининг пахта толасига бўлган талабларига тўла жавоб берадиган бўлиши лозим. Пахта толасининг сифати унинг қатор хоссаларига қараб белгиланади, шулар ичидан энг муҳимларидан бири – тола чиқиши ва узунлиги ҳисобланади. Шунинг учун тола узунлиги, чиқими, индекси, микронейри ва бошқа сифат белгиларини ўрганиш ғўза генетикаси ва селекциясида муҳимдир [2, 4].

Селекционер олимлар яратилган бир қатор тизмаларининг сифатини замонавий ўлчов асбоби HVI да аниқлаб, пахта толасининг сифатини белгилайдиган асосий кўрсаткичлардан бири солиштирма узилиш кучи (гк/текс) нинг жуда кучсиз – 17, ундан паст 18-21 гача - кучсиз, 22,0-25,0 гача ўрта, 26,0-29,0 гача - мустаҳкам, 30,0 ва ундан юқорилари жуда мустаҳкам бўлишини аниқлаганлар [5].

## АДАБИЁТЛАР ТАҲЛИЛИ ВА МЕТОДОЛОГИЯ

Тажрибамизда манба сифатида толаси IV-V типга хос ғўза навлари – С-6524, АН-Боёвут-2, Наманган-77, Деҳқонбоб ва АН – 130 ва уларнинг реципрок дурагайлариининг  $F_1$ - $F_2$  ўсимликлари ўрганилди. Тажиба олиб бориш жараёнида реципрок  $F_1$  дурагайларида муҳим тола сифати кўрсаткичлари ва қимматли хўжалик белгиларининг ирсийланиши ва ўзгарувчанлиги,  $F_2$  дурагайларида айрим



қимматли хўжалик белгилари ва тола сифат кўрсаткичларининг ўзгарувчанлик кўлами ота – она шакллари билан таққослаб ўрганилди. Навларнинг  $F_1$  дурагай комбинацияларида ҳар бирдан 40 тадан,  $F_2$  дурагай комбинацияларининг ҳар бирида 120 тадан ўсимлик ўрганилди. Бу навлар 3 та такрорланишдан, ҳар бир такрорланишда 6 та қатордан ҳаммаси бўлиб 36 қатор, 90x20x1 схемасида экилди.

Биринчи бўғин дурагайларида белгиларнинг доминантлик даражаси G.E.Weil ва R.E.Atkins [3] ишларида келтирилган S.Wright формуласи бўйича аниқланди:

$$h_p = \frac{F_1 - MP}{P - MP}$$

Иккинчи бўғин дурагайларида белгининг авлоддан-авлодга берилиш кўрсаткичи ( $h^2$ ) S.N. Warner [151; 427-430-б.] формуласи асосида ҳисоблаб чиқилди:

$$h^2 = \frac{\delta^2 F_2 - \frac{\delta^2 F_1 + \delta^2 P_1 + \delta^2 P_2}{3}}{\delta^2 F_2}$$

## НАТИЖАЛАР ва МУҲОКАМА

**Солиштирма узилиш кучи (Str)** – пахта толасининг пишиқлиги бўлиб, калибрланувчи пахтанинг HVI даражаланишида (HVI Calibration Cotton), гк/текс (граммкуч/текс) ёки сН/текс (сантиньютон/текс) билан ифодаланади.

Бу белги бўйича тадқиқотларимиз натижаларига кўра, АН-Боёвут-2 навида 29,8 гс/текс, С-6524 навида 32,1 гс/текс ни ташкил қилди. Бу навларнинг реципрок усулида чатиштириб олинган  $F_1$  АН-Боёвут-2 х С-6524 дурагай комбинацияси 32,7 гс/текс га тенг бўлди ва ижобий гетерозис ( $h_p=1,52$ ) ҳодисаси юзага чиқди. Ўзгарувчанлик амплитудаси 20,1-34,4 ҳамда вариация коэффиценти 5,4% ни ташкил этди. Реципрок комбинациясида солиштирма узилиш кучи белгиси ўртача 27,3 гс/текс ни ташкил қилди ва бу комбинацияда ҳам салбий гетерозис ( $h_p=-3,17$ ) ҳолати кузатилди. Ўзгарувчанлик амплитудаси 23,1-30,6 гс/текс оралиғида, вариация коэффиценти 7,4% бўлганлиги аниқланди. Солиштирма узилиш кучи белгиси бўйича олинган натижаларда АН-Боёвут-2 ва С-6524 ғўза навлари реципрок комбинацияларида ижобий ( $h_p=1,52$ ) ва салбий ( $h_p=-3,17$ ) тўлиқ устунлик кузатилди.

Наманган-77 навининг солиштирма узилиш кучи белгиси ўртача 27,3 гс/текс, Дехқонбоб нави 27,4 гс/текс га тенг бўлди.  $F_1$  Наманган-77 х Дехқонбоб дурагай комбинациясида солиштирма узилиш кучи кўрсаткичи ўртача 27,4 гс/текс га



эга бўлди ва тўлиқ ижобий доминантлик ( $hp=1,00$ ) ҳодисаси кузатилди. Ўзгарувчанлик амплитудаси 20,0-31,4 ҳамда вариация коэффиценти 10,6% га тенг бўлганлиги аниқланди.  $F_1$  Дехқонбоб х Наманган-77 комбинацияси солиштирма узилиш кучи ўртача 27,2 гс/текс ни ташкил қилди ва ижобий гетерозис ( $hp=3,00$ ) ҳолати кузатилди. Ўзгарувчанлик амплитудаси 17,1-32,1 гс/текс оралиғида бўлди, вариация коэффиценти эса, 8,9% тенг бўлди.

АН-130 навининг солиштирма узилиш кучи белгиси ўртача 32,9 гс/текс га тенг бўлди.  $F_1$  Наманган-77 х АН-130 дурагай комбинациясида солиштирма узилиш кучи белгиси ўртача 33,8 гс/текс га ташкил қилди ва ижобий гетерозис ( $hp=1,32$ ) ҳодисаси кузатилди. Ўзгарувчанлик амплитудаси 27,0-39,6 гс/текс ҳамда вариация коэффиценти 7,8% га тенг бўлганлиги кузатилди. Навларнинг реципрок дурагай комбинациясининг солиштирма узилиш кучи ўртача 28,0 гс/текс ташкил этди ва қисман салбий доминантлик ( $hp=-0,75$ ) ҳолати кузатилди. Ўзгарувчанлик амплитудаси 17,8-33,8 ўртасида бўлиб, вариация коэффиценти 11,1% га тенг бўлганлиги аниқланди (3.2-жадвалга қаранг).

АН-Боёвут-2 ва С-6524 навларининг  $F_2$  дурагай комбинацияси солиштирма узилиш кучи белгиси ўртача 28,6 гс/текс га тенг бўлиб, наслдан-наслга берилиш коэффиценти  $h^2=0,75$ , ўзгарувчанлик амплитудаси 23,7-33,6 гс/текс, вариация коэффиценти 18,3% эга бўлганлиги кузатилди. Реципрок комбинациясида эса, солиштирма узилиш кучи ўртача 33,9 гс/текс, наслдан-наслга берилиш коэффиценти  $h^2=0,70$ , ўзгарувчанлик амплитудаси 27,1-40,0 оралиғида бўлди ва вариация коэффиценти 14,0% га тенг бўлганлиги кузатилди.

## 1-жадвал

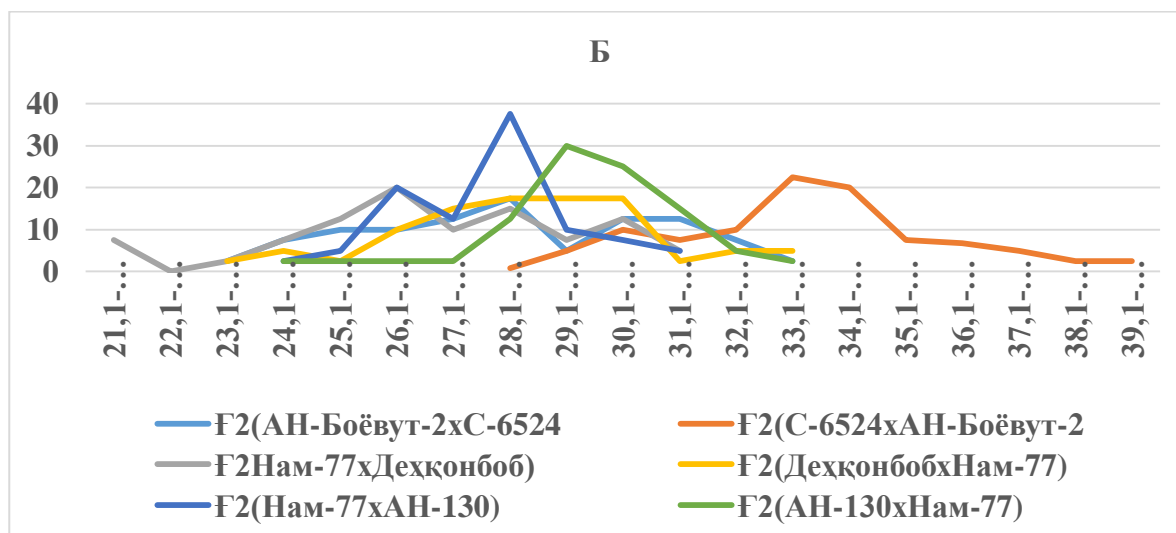
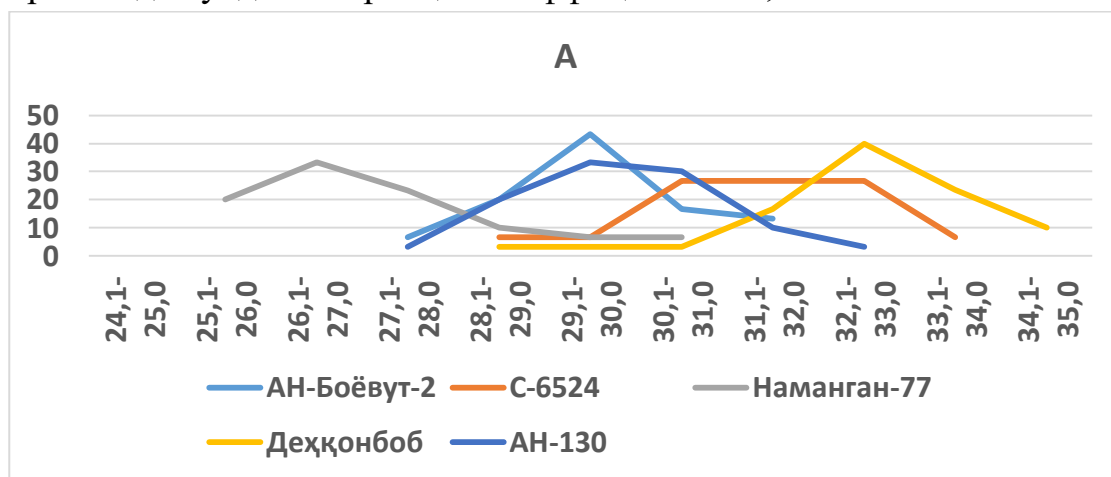
Солиштирма узилиш кучи белгисининг  $F_1$  ва  $F_2$  дурагайларида ирсийланиши

№	Нав ва дурагай комбинациялар	n	Limit	$M \pm m$ гс/текс.	$\sigma$	V%	hp	$h^2$
1	АН-Боёвут-2	30	27,9-31,7	29,8 $\pm$ 0,24	1,05	3,5		
2	С-6524	30	27,6-34,4	32,1 $\pm$ 0,26	1,17	3,6		
3	Наманган-77	30	25,1-31,0	27,3 $\pm$ 0,33	1,48	5,4		
4	Дехқонбоб	30	25,2-29,5	27,4 $\pm$ 0,24	1,08	3,9		
5	АН-130	30	27,9-32,3	32,9 $\pm$ 0,19	0,87	2,6		
6	$F_1$ АН-Боёвут-2хС-6524	40	20,1-34,4	32,7 $\pm$ 0,39	1,76	5,4	1,52	
7	$F_2$ АН-Боёвут-2хС-6524	120	23,7-33,6	28,6 $\pm$ 1,17	5,23	18,3		0,75
8	$F_1$ С-6524хАН-Боёвут-2	40	23,1-30,6	27,3 $\pm$ 0,45	2,0	7,4	-3,17	
9	$F_2$ С-6524хАН-Боёвут-2	120	27,1-40,0	33,9 $\pm$ 1,06	4,75	14,0		0,70
10	$F_1$ Наман-77х Дехқонбоб	40	20,0-31,4	27,4 $\pm$ 0,65	2,89	10,6	1,00	
11	$F_2$ Наман-77х Дехқонбоб	120	21,1-31,3	27,1 $\pm$ 1,21	5,41	19,9		0,66



12	F <sub>1</sub> ДехқонбобхНаман-77	40	17,1-32,1	27,5±0,55	2,44	8,9	3,00	
13	F <sub>2</sub> ДехқонбобхНаман-77	120	23,7-33,6	28,7±1,00	4,45	15,5		0,63
14	F <sub>1</sub> Наманган-77хАН-130	40	27,0-39,6	33,8±0,59	2,65	7,8	1,32	
15	F <sub>2</sub> Наманган-77хАН-130	120	24,2-31,7	28,1±0,71	3,20	11,4		0,48
16	F <sub>1</sub> АН-130хНаманган-77	40	17,8-33,8	28,0±0,73	3,25	11,1	-0,75	
17	F <sub>2</sub> АН-130хНаманган-77	120	25,3-33,1	30,0±0,96	4,30	14,3		0,57

F<sub>2</sub> Наманган-77 х Дехқонбоб комбинациясида солиштирма узилиш кучи кўрсаткичи ўртача 27,1 гс/текс га тенг бўлиб, наслдан-наслга берилиш коэффиценти  $h^2=0,66$ , ўзгарувчанлик амплитудаси 21,1-31,3 гс/текс, вариация коэффиценти 19,9 % ни ташкил этди. Реципрок комбинациясида эса, солиштирма узилиш кучи ўртача 28,7 гс/текс ни ташкил қилиб, наслдан-наслга берилиш коэффиценти  $h^2=0,63$ , ўзгарувчанлик амплитудаси 23,7-33,6 гс/текс оралиғида бўлди ва вариация коэффиценти 15,5% га тенг эканлиги аниқланди.



1-расм. Ота-она шакллар (А) ва уларнинг F<sub>2</sub> ўсимликларида (Б) солиштирма узилиш кучи белгисининг ўзгарувчанлик кўлами



Наманган-77 ва АН-130 навларининг  $F_2$  комбинациясида солиштирма узилиш кучи белгиси ўртача 28,1 гс/текс га эга бўлиб, наслдан-наслга берилиш коэффициенти  $h^2=0,48$ , ўзгарувчанлик амплитудаси 24,2-31,7 гс/текс ни ташкил қилди ҳамда вариация коэффициенти 11,4% га тенг бўлди. Ушбу навларнинг реципрок комбинациясида солиштирма узилиш кучи белгиси ўртача 30,0 гс/текс га тенг бўлиб, наслдан-наслга берилиш коэффициенти  $h^2=0,57$ . Ўзгарувчанлик амплитудаси 25,3-33,1 гс/текс ўртасида бўлди, ҳамда вариация коэффициентининг 14,3% га тенг бўлганлиги кузатилди (1-жадвал).

$F_2$  комбинацияларида солиштирма узилиш кучи белгиси бўйича ўзгарувчанлик кўлами 8-12 синфни қамраб олди. АН-Боёвут-2 х С-6524 ва Наманган-77 х Дехқонбоб реципрок комбинацияларида ҳамда АН-130 х Наманган-77 комбинациясида ўнг томонли трансгрессия юзага келди. Солиштирма узилиш кучи белгиси бўйича С-6524 х АН-Боёвут-2 дурагай комбинацияси энг юқори кўрсаткич (33,9 гс/текс)га эга бўлди ва кенг кўламдаги трансгрессив ўзгарувчанлик шаклланди (1-расм).

## ХУЛОСА

Тола солиштирма узилиш кучи белгиси бўйича С-6524 ва АН-130 навлари бошқа навларга нисбатан яхши натижани кўрсатди.  $F_1$  ўсимликларида АН-Боёвут-2 х С-6524 ва Наманган-77 х АН-130 комбинациялари,  $F_2$  ўсимликларида С-6524 х АН-Боёвут-2, АН-130 х Наманган-77 комбинацияларида ота-она шаклларга нисбатан юқори натижа кўрсатганлиги аниқланди.  $F_2$  реципрок комбинацияларида солиштирма узилиш кучи белгисининг наслдан-наслга берилиш коэффициенти  $h^2=0,48-0,75$  га тенг бўлди, бу эса таҳлил қилинаётган белгининг 48,0-75,0 % дурагай шаклнинг генотип, 25,0-52,0% ташқи муҳит таъсирида ирсийланганлигидан далолат беради.

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## ҚОРАҚАЛПОҒИСТОН ШАРОИТИДА ЕТИШТИРИЛГАН ШОЛИ НАВЛАРИНИНГ ТЕХНОЛОГИК КЎРСАТКИЧЛАРИ

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### АННОТАЦИЯ

Шоли дони бошқа донларга солиштирганда, пишиш даврида ўрим-йиғим, ташиш, йиғиб олингандан сўнг донга ишлов бериш ва сақлаш даврида ноқулай шароитларга тушганда кўпинча ҳар хил макро ва микрошикастликлар пайдо бўлиши кузатилади, натижада уларнинг технологик кўрсаткичлари айниқса бутун гуруч чиқимини кескин пасайтиб юборади.

**Kalit so'zlar:** nav, qurg'oqchilik, shishasimon, sho'rланish, hashorat, kasallik, hosildorlik.

### ABSTRACT

Compared to other grains, when rice grain is exposed to unfavorable conditions during ripening, harvesting, transportation, post-harvest grain processing and storage period, many different types of macro and micro damages are observed, thus their technological indicators drastically reduce the output of rice.

**Keywords:** variety, drought, vitreous, salinity, pests, disease, fertility.

### КИРИШ

Бугунги кунда бозор иқтисодиёти шароитида янгидан яратилган шоли навлари юқори ҳосил тўплаши билан бир вақтда донининг технологик сифат кўрсаткичлари, озиқ-овқат ва кулинариялик хоссалари жаҳон бозори талаблари мос равишда юқори кўрсаткичларга эга бўлиши лозим.



Қишлоқ хўжалиги йилдан-йилга жадал ривожланиб бормоқда. Бу жараёнда Юртбошимиз раҳбарлигида соҳада бозор реформаларини кенгайтириш натижасида, қайта ишлаш ва экспорт инфратузилмасининг ривожланиб бораётганлиги, соҳанинг давлат томонидан қўллаб-қувватланишининг замановий инновацион сув ва ресурсларни тежайдиган технологияларнинг жадал тарзда кириб келаётганлиги, эришилаётган юқори натижаларда асосий ўринни эгалламоқда [1].

Дунё бозорида шоланинг энг қимматлиси узун гуручли юқори шишасимонликка эга бўлган навлари ҳисобланади. Бугунги кунда ер ва сув ресурсларининг чекланганлигини ҳисобга олиб, шолчилик самарадорлигини ошириш ҳамда республикада яратилган истиқболли навларнинг биологик хусусиятларидан тўлиқ фойдаланишда илм-фан соҳасида ишлаб чиқилган янги самарали агротехнологияларни амалиётга кенг жорий қилиш ҳозирги куннинг долзарб масалалари бири ҳисобланади [4].

Истиқболли шоли навларини кўз билан кўриб баҳолаганда биринчи навбатда кўзга ташланаётган кўрсаткичларга доннинг шакли ва унинг ўлчами киради. Доннинг шакли доннинг узунлининг энига нисбати бўйича ҳисобланади.

Барча давлатларда шоли навлари узун гуручли, ўртача узунликдаги ва калта юмолақ гуручли навлар бўлиб бўлинади. Узун донли сортларда доннинг узунлиги (L) энини (b) нисбати ( $Lb=3$ ) учдан юқори. Ўртача донли навларда бу кўрсаткич 2,0 – 2,9 га тенг бўлади, юмалоқ донли навларда 1,6 – 2,0 га тенг. Шоли донининг технологик кўрсаткичлари, навдорлик белги бўлиб, уларга доннинг шакли, йириклиги, қобиклиги, тиниқ ва шишасимонлиги, синишга мойиллиги, умумий ҳосилнинг (ёрма), шундан бутун гуручнинг чиқими бўйича бир-бирдан ажралиб туради [2,3].

## АДАБИЁТЛАР ТАҲЛИЛИ ВА МУҲОКАМА

Ерни тайёрлашда - дастлаб майдон бегона ўтлардан тозаланиб, 1 сотих майдонга 180–200 кг (10 сотихга 1,8–2 т) чириган, тоза гўнг солинди. Ер 15–20 см чуқурликда юмшатилиб, йирик кесаклар майдаланди, яхшилаб текислангач пол олинади ва сув бостирилди. Экишдан олдин челлар 4–6 см қалинликда сув билан бостирилади. Қаторлар ораси 15 см, уялар ораси 10 см, ҳар бир уядаги уруғ сони 3–4 та. Экилгандан кейин полдаги сув сатҳи 10–15 кун давомида 5–8, кейинчалик 10–12 см бўлиши керак. Шоли азотли (карбамид, сульфат аммоний), фосфорли (аммофос) ва калийли ўғитлар билан уч марта озиклантирилади. Вегетация даврида 1



сотихга 0,4 кг (10 сотихга 4 кг) меъёрда биринчи озиклантириш, кўчат 8–9 та барг чиқарганда 1 сотихга 0,3 кг (10 сотихга 3 кг) меъёрда иккинчи озиклантириш ва бошоқлаш даврида 1 сотихга 0,3 кг меъёрда учинчи озиклантириш ўтказилади. Шоли майдони бегона ўтлардан доимий равишда тозалаб турилади.

## НАТИЖАЛАР ВА МУҲОКАМА

Тадқиқотлар олиб боришимиздан асосий мақсад, шоли навлари донининг технологик кўрсаткичлари бўйича баҳоланиб таҳлил қилиш ва энг яхши натижага эга бўлган намуналарнинг мослашувчанлиги ўрганиш

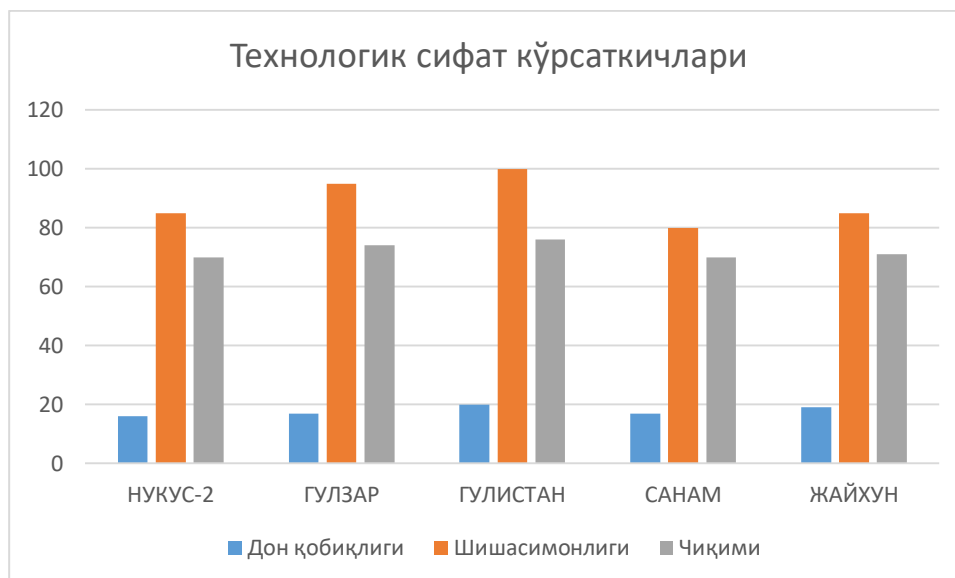
Ўрганилган навлар донининг технологик кўрсаткичлари бўйича баҳоланиб таҳлил қилинганимизда энг яхши натижага эга бўлган намуналар бизнинг шароитимизга мослашганлигини кўрсатди.

Олинган маълумотларга қараганда танлаб олинган навлар донининг тиниқлиги ва қобиқлилиги кўрсаткичлари бўйича қониқорли миқдорга эга эканлиги маълум бўлди.

Энг ўта қобиқли шишасимон гуручли навларга Санам, Жайхун, Гулситон навлари киради. Бу кўрсаткич андоза навларда 17 – 19 % оралиғида бўлди. Навлар донининг қобиқлилиги кўрсаткичи қанча юқори бўлса, улардан шунча умумий ёрма чиқими миқдори кам бўлиши илмий жиҳатдан исботланган.

Илмий тадқиқотларда шоли дони қанчалик йирик бўлса, унинг қобиқлилиги миқдори шунчалик кам бўлади. Бизнинг тажрибаларимизда ўрганилаётган шоли нав намуналаримизда ҳам шундай қонуният сақланиб қолди. Ўта қобиқли нав намуналарининг умумий ҳосили (ёрмаси) чиқими қалин қобиқли навларга солиштирганда анча кўп бўлди. Доннинг қобиқлилиги кўрсаткичи навдорлик белгиси бўлиб, доннинг гул қобиғининг умумий ҳосилининг миқдorigа нисбати фоиз ҳисобида аниқланиб ўрганганимизда бу кўрсаткичнинг миқдори 16,0% дан 20% оралиғида бўлди.

Шоли донининг синиш даражасининг миқдори навдорлик белги бўлгани билан бу кўрсаткичга ташқи муҳитнинг ҳамда шолини экиб парваришlash технологияси катта таъсир кўрсатади. Бу кўрсаткич танлаб ажратиб олинган навларда ҳархил миқдорда бўлиб навдорлик белги эканлиги аниқланди.



**Расм.1. Шоли навларида сифат кўрсаткичларининг таҳлили**

Шоли донининг технологик кўрсаткичлари ичида синиб ёрилиши гуручнинг шлифовкаланганда уларнинг эндоспермасининг зичлигининг механик таъсирга чидамлилигини белгиловчи кўрсаткич бўлиб ҳисобланади.

Шоли дони бошқа донларга солиштирганда, пишиш даврида ўрним-йғим, ташиш, йиғиб олингандан сўнг донга ишлов бериш ва сақлаш даврида ноқулай шароитларга тушганда кўпинча ҳар хил макро ва микрошикастликлар пайдо бўлиши кузатилади, натижада уларнинг технологик кўрсаткичлари айниқса бутун гуруч чиқимини кескин пасайтиб юборади.

Ўрганилаётган шоли навлари бу кўрсаткичнинг миқдорига қараб Оролбўйи ҳудудида қанақа мослашганлигини аниқлашга бўлади. Чунки, бозор иқтисодиёти шароитларида шоли донини қайта ишловчи корхоналар шоли донининг технологик кўрсаткичларига юқори талаб қўймоқда. Айниқса, синиб ёрилиши кам, эндоспермаси тифиз тиниқ шишасимон гуручли навларни юқори баҳолайди. Сабаби, бундай гуручларнинг кулинариялик баҳоси яхши бўлиб, бир-бири билан ёпишиб қолмайди, яхши бир текис ёйилиш, сув синдириш аҳамиятига эга, тами ва мазаси жуда яхши бўлади. Ўрганилган нав намуналарининг шишасимонлиги 85% дан 100% оралиғида бўлди (расм-1.).

Бизнинг танлаб ажратиб олиб ўрганган навларимизнинг умумий ҳосил чиқими 70% дан 76% оралиғида бўлди. Бу кўрсаткич бўйича энг яхшиси Санам ва Алмаз навларида кузатилди. Нав намуналарини баҳолаганимизда асосий кўрсаткич умумий ҳосил чиқими (ёрма) ва ундан бутун гуруч чиқими бўлиб ҳисобланади.

## ХУЛОСА

Шоли навлари донинг қобқилиги, шишасимонлиги, синиб ёриловчанлик кўрсаткичларининг барчаси деярли умумий ҳосил чиқимиға (ёрма), шу жумладан бутун гуруч чиқимиға ўз таъсирини кўрсатиши аниқланди.

Барча технологик кўрсаткичларини ҳисобға олиб қимматли-хўжалик белгилар юқори бўлган нав яратиш мақсадида ушбу нав намуналарини ота-она жуфтларни чатиштириш ишларини олиб боришда фойдаланишни тавсия этамиз.

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## ENVIRONMENTAL IMPACT ASSESSMENT IN AN INTERNATIONAL CONTEXT

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### ABSTRACT

Pollution of the natural environment is progressively increasing in accordance with the increasing rate of technogenic load. This problem necessitates taking measures to prevent negative consequences. Due with this, at the state level, an assessment of the state and impact on the environment and the development of measures aimed at its protection in the legal aspect are carried out. Subjects appropriate to carry out these activities need to determine the legal distinction between the definitions of environmental monitoring and environmental impact assessment.

**Keywords:** environmental impact assessment, planned economic and other activities, state ecological expertise, transboundary procedure, environmental impact assessment report, public discussions.

Modern issues of environmental protection are becoming increasingly important both at the state level and for the international community, which has adopted a new sustainable development agenda for the period up to 2030. – Transforming Our World: The 2023 Agenda for Sustainable Development, which defines 17 Sustainable Development Goals (SDGs) accompanied by 169 targets. Environmental protection is one of the three key elements of the concept of sustainable development, which is reflected in the SDGs. This, in particular, is emphasized in the 2017 Minsk Declaration adopted at the seventh session of the Meeting of the Parties to the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) and the third session of the Meeting of the Parties to the Convention serving as the Meeting of the Parties to the Protocol on Strategic Assessment.

The Report of the United Nations International Law Commission in 2016 on the protection of the atmosphere at its sixty-eighth session in 2016 emphasizes the obligation of environmental impact assessment in a guideline: states have an obligation to ensure that an environmental impact assessment is carried out for proposed activities under their



jurisdiction or control that may have significant adverse effects on the atmosphere in terms of atmospheric pollution or atmospheric degradation.

At present, the transboundary aspect is particularly relevant. In this regard, the essence of environmental impact assessment in general and in the transboundary context considered by us in the framework of the EIA study, in particular, lies in the obligation of a comprehensive, integrated understanding of such impact in terms of the intended economic and other activities.

As pointed out by the International Court of Justice in the Costa Rica Road along the San case, it is the duty of a state to exercise due diligence to prevent significant transboundary harm before undertaking activities that have the potential to cause environmental harm to another state. If such a hazard exists, the State concerned must carry out an environmental impact assessment.

The genesis of environmental impact assessment in the legal space states the most difficult path for almost fifty years of existence - from the norms of the national law of a number of states to the consolidation of key positions in the following international treaties: Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) 1991, Convention on Early Notification of Nuclear Accidents 1992, Convention on Long Range Transboundary Air Pollution 1979, Framework Convention for the Protection of the Marine Environment of the Caspian Sea 2003, Convention on the Protection and Use of Transboundary Watercourses and International Lakes 1992, Convention on Access to Information, public participation in decision-making and access to justice in environmental matters (Aarhus Convention) 1998, Madrid Protocol 1991. to the Antarctic Treaty of 1959), in the environmental programs of the European Union, in soft law documents, draft regional international agreements (in the region of the Caspian Sea, the states of North America that form NAFTA).

In connection with the specific needs and obligations of states in various areas of environmental protection, the regulation of EIA in international legal documents has become more complicated and detailed. This trend has led to the fact that already at the turn of the XX - XXI centuries. the international legal customary nature of EIA obligations has been confirmed in a number of cases by the International Court of Justice, the International Tribunal for the Law of the Sea, as well as international arbitrations of various branches. In this last case, the International Court of Justice noted that there is an international custom for the need for an EIA, but there is no consensus on its legal content. This fact, of course, emphasizes the importance of conducting scientific research on the comparison of existing EIA procedures, identifying the best



practice for conducting EIA in accordance with current international law.

“In addition, a number of international intergovernmental organizations, such as the World Bank, have become actively involved in the promotion of EIA through the adoption of their internal rules or guidelines.” The European Bank for Reconstruction and Development, as a mandatory requirement for obtaining a loan, indicates an environmental impact assessment, called an environmental impact analysis (EIA), which is one of the most important types of environmental assessments.

Environmental impact assessment is an institution of international environmental law, the subject of which is the relationship of states and other subjects of international law to assess the likely transboundary impact of a planned activity on the environment, whose physical source is located wholly or partially within the jurisdiction of one of the parties. The principles of regulation of the institution of environmental impact assessment are: the presumption of potential environmental hazard of the impact of the planned activity on the environment, the obligation to comply with the national EIA procedure, preventiveness, objectivity, alternativeness, comprehensiveness, transparency, consideration of public opinion. The method of legal regulation of the EIA institute is the agreement of its participants on fixing the planned activity in the national legislation of the parties to the EIA procedure with the appointment of the relevant authorities and responsible persons. The sources are international agreements that differ in certain specifics of legal regulation.

Environmental impact assessment, as well as issues of its implementation, as an institution of international environmental law, were initially enshrined in national legislation, and only then developed in international law. At the same time, it was found that the implementation of environmental impact assessment in the international context differs from the national procedure in a number of aspects that determined the specifics of the international legal regulation of this procedure: the need to take into account the sovereignty of states of potential impact; the objective existence of an increased need for bilateral, regional and universal cooperation; the need to take into account the views of the public of the state whose interests will be affected; the need for interstate consultations; cross-border implementation of the assessment procedure.

Under the strategic environmental assessment, it is necessary to understand the analysis of the expected environmental consequences, including all stages of the formation of an environmental report, including the participation of various public institutions, consultations with



specialists, as well as taking into account the provisions of such a report and the results of consultations with the public in the plan or program. Like EIA, SEA seeks to prevent or mitigate the negative impact of an activity on the environment until a decision is made on the possibility of implementing such an activity. Due to the fact that strategic environmental assessment affects decision-making at an earlier stage than EIA, it can be said that it contributes to sustainable development and is an important tool in the development of plans and programs.

The institution of transboundary EIA, originally enshrined in the UNECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo, 1991), which is the most important binding international treaty for its participants, is being developed during the annual Meetings of the Parties to the Espoo Convention, as through the adoption of binding amendments to the Convention (the 2001 amendment entered into force on 08/26/2004 and the 2004 amendment entered into force on 10/23/2017) and protocols (Protocol on Strategic Environmental Assessment 2003), and soft law documents (“Guidelines”, etc.).

It seems necessary to develop a model legislative act for the CIS member states and introduce clarifications into the conceptual apparatus for a clear distinction between such concepts as “strategic environmental assessment”, “environmental impact assessment”, “state environmental expertise”; creation of norms that would clearly regulate the procedure (procedure) for conducting an EIA and its individual stages. In addition, it is necessary to develop a national procedure for conducting transboundary EIA, which would be consistent with ratified international treaties, and recommend that the CIS member countries bring their domestic environmental legislation in line with this model legal act.

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## DARSDAN TASHQARI MASHG‘ULOTLARNI REJALASHTIRISHDA SINFLAR RAHBARLARI VA O‘TANALAR BILAN HAMKORLIKDAGI FAOLIYAT (“TARBIYA” FANI MISOLIDA)

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“Huquq va ijtimoiy- gumanitar fanlar” kafedrasida katta o‘qituvchisi

### ANNOTATSIYA

Mazkur maqolada ijtimoiy fanlar kesimida darsdan tashqari ishlarni tashkil qilish, rejalashtirishning uslubiy asoslari taqdim qilingan. Shuningdek darsdan tashqari ishlarni tashkil qilishda fan o‘qituvchining sinf rahbari va ota-onalar bilan hamkorlikda olib boriladigan faoliyat mexanizmlari aks ettirilgan. Ta’lim sub’yektlari hamkorligi asosida tashkil qilinadigan darsdan tashqari ishlarning har bir sub’yektga taqdim qiluvchi imkoniyatlari bayon etilgan.

**Kalit so‘zlar:** darsdan tashqari ishlar, hamkorlikdagi faoliyat, rejalashtirish, ish shakllari, innovasion usullar, yo‘nalishlar, tarbiyaviy ishlar, sinf rahbarlari, ota-onalar

### ACTIVITY IN COOPERATION WITH CLASSROOM LEADERS AND PARENTS IN PLANNING OUTSIDE THE CLASSROOM ACTIVITIES (IN THE EXAMPLE OF THE SUBJECT “EDUCATION”)

### ABSTRACT

This article presents the methodological foundations of organizing and planning extracurricular activities in the field of social sciences. Also, the mechanisms of the science teacher's cooperation with the head of the class and parents in the organization of extracurricular activities are reflected. The possibilities of extracurricular activities organized on the basis of cooperation of educational subjects for each subject are described.

**Keywords:** extracurricular activities, cooperative activities, planning, forms of work, innovative methods, directions, educational activities, class leaders, parents

### KIRISH

Darsdan tashqari ishlar birinchi navbatda tashabbus bilan tashkil etiladigan faoliyat sifatida namoyon bo‘ladi. Asosiy tashabbuskorlar: fan o‘qituvchilari, sinf rahbarlari va qo‘shimcha ta’lim o‘qituvchilari, ota-onalar hisoblanadi. Shu o‘rinda ota-onalarning



ta'lim salohiyati, tarbiyalanganlik holati qoniqarli bo'lmasa sinf rahbarlari, fan o'qituvchilari ularning farzandlarini darsdan tashqari mashg'ulotlarga va ishlarga jalb qilishida to'g'ri yo'nalish va maslahatlar berib borishlari zarur. Aksariyat ota-onalar o'z farzandlari kelajagi va ertangi kuni uchun qayg'uradi va bo'sh vaqtlarini unumli tashkil qilishga sharoit va e'tibor qaratadilar. Darsdan tashqari ishlarning asosiy maqsadi o'quvchilar bo'sh vaqtini unumli tashkil qilish, ularni qiziqtiradigan faoliyatning ma'lum turiga, ommaviy, ijtimoiy foydali faoliyatga jalb qilishdan iborat.

### ADABIYOTLAR TAHLILI

Sinfdan tashqari ishlarni tashkil qilishning nazariy asoslari, amaliy jihatlari, uning usul va shakllari maxalliy olimlar Sh.Mardonov, A.Xalikov, A.Sadikova, F.Ibragimova, N.Artikova, J.Abdusamatov, R.Shermatov, O.Norbadalov, E.Nokuvvatovlar tomonidan o'rganilgan. Mazkur tadqiqotchilar sinfdan tashqari ishlarni tashkil qilishning nazariy va amaliy jihatlari yoritishda muayyan fan nuqtai nazaridan yondashgan. Ammo ularda ta'lim bosqichlarida, xususan, boshlangich ta'limda ushbu masalaning amaliyotga joriy etilishi yetarli darajada yoritilmagan.

### NATIJA VA MUHOKAMALAR

Umumta'lim maktablarida darsdan tashqari ishlar shunday tashkil qilinishi kerakki, har bir o'quvchining qiziqishlari, sevimli mashg'ulotlarini o'rganish asosida ularning individual rivojlanishini ta'minlashi lozim. Sinfdan tashqari ishlarni maqsadli va to'g'ri tashkil qilish bolaning shaxs sifatida shakllanishi va jamiyatda muvaffaqiyatli moslashishi, ongli kasb tanlashiga yordam beradi [1]. Har bir o'quvchi o'ziga xos qobiliyatga ega bo'ladi. Ko'plab pedagoglar qobiliyatsiz bola bo'lmasligini faqat uni anglamaydigan bolalar mavjudligini aytadi. Darsdan tashqari ishlar har bir o'quvchining ijodiy salohiyatini, uning qobiliyatlarini namoyon qilishiga yordam beradi. Bolada individuallikni shakllantiradigan shaxsiy xususiyatlar: tashabbus, mustaqillik va o'ziga xoslikni yuzaga chiqarish sinfdan tashqari ishlarni tashkil qilishda innovatsion yondashuvlardan foydalanishni taqozo qiladi. Sinfdan tashqari ishlarni tashkil etish va o'tkazishda tarbiyachining eng muhim vazifasi o'quvchilarni o'quv vazifalarini hal etishga o'rgatishdan iborat. Buning uchun harakat usullarini to'g'ri tanlashi, o'z hatti-harakatlariga rahbarlik faoliyatini nazorat qilishdan, mustaqil ish ko'nikmalarini boshqa muhim hayotiy vaziyatlarga o'tkazishdan kelib chiqishdan iborat ekanligini nazarda tutish lozim [2]. O'qituvchi o'quvchi bilan darsdan tashqari birgalikdagi faoliyatida insonparvarlik, erkinlik va



demokratiya tamoyillariga rioya qilishi pedagogik o‘zaro ta’sirning samaradorligini oshirishni ta’minlaydi [3].

“Tarbiya” fanida darsdan tashqari mashg‘ulotlariga o‘quvchilarni jalb qilishning dastlabki bosqichida o‘qituvchilarning umumiy ta’limdagi yondashuvlar haqida xabardor bo‘lishi maqsadni to‘g‘ri qo‘yishda va maktab istiqbolida muhim ahamiyatga ega. Sinfdan tashqari ishni tashkil qilishning ilk bosqichida o‘qituvchi va sinf rahbarlari o‘quvchilarni darsdan tashqari mashg‘ulotlarga motivatsiyasini shakllantirishi kerak. Uni tashkil qilishning quyidagi shakllari mavjud: individual darslar, ommaviy ishlar, tanlovlar, viktorinalar, muzeylarga sayyohat, maktab ko‘rgazmalari, ekskursiyalar, ijodiy to‘garaklar, sport to‘garaklari va h.z. Yaxlit pedagogik jarayon sifatida sinfdan tashqari ishlarni tashkil etishning doimiy shakllari bilan bir qatorda olimpiadalar, viktorinalar, tanlovlar, musobaqalar, ko‘rgazma va ekspeditsiyalar kabi epizodik tadbirlar katta ahamiyatga ega [4].

Biz sanab o‘tgan ish shakllari asosida o‘qituvchi boladagi qiziqishlar, fan sohalariga bo‘lgan moyillik, uning potensial imkoniyatlari, manfaatlarini aniqlay oladi. Shu asosida o‘qituvchi har bir o‘quvchi uchun individual rivojlanish trayektoriyasini ishlab chiqishi va taklif qilishi mumkin bo‘ladi.

**Rejalashtirish** - sinf rahbari faoliyatida bolalar bilan ishlashda to‘xtamaydigan ijodiy jarayon bo‘lishi, qotib qolgan shaklda bo‘lmasligi, doimiy boyitilib borilishi va ijodkorona yondashilishi lozim bo‘lgan jarayon sifatida qaralishi lozim. Sinf ishini rejalashtirishda sinf jamoasini nafaqat tarbiyaviy, balki ta’limiy jihatdan rivojlantirish haqida vazifalar belgilanishi lozim. Rejalashtirish sinf rahbarining ta’lim sifatini boshqarish texnologiyasida eng muhim omil bo‘lib xizmat qiladi. Rejalashtirish sinf rahbariga quyidagi imkoniyatlarni beradi:

- sinf jamoasini, tarbiyalanganlik darajasi va ularning ta’lim imkoniyatlarini o‘rganish;

- sinfning ta’lim tizimini rivojlantirish maqsadini aniq anglash;

- ta’limning strategik va taktik vazifalarini belgilash;

- o‘quv faoliyatining shakllari, usullari va vositalarini maqsadga muvofiq tanlash;

- natijalarni tahlil qilish asosida ta’lim-tarbiya tizimidagi har bir sub’yektning sinf jamoasi boshqaruv faoliyati natijalarini bashorat qilish, rivojlanishdagi oldinga siljishni rejalashtirish uchun faoliyat mazmunini analitik asoslash, kelajakda kutiladigan pedagogik muammolarni aniqlash;

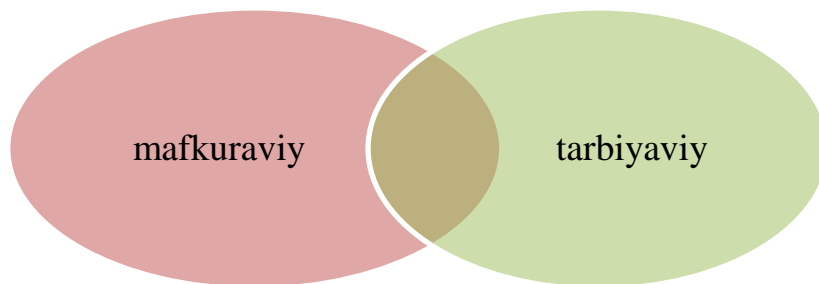
- maqsad va vazifalarni shakllantirish;

maqsadlar va echimlarga erishishni ta’minlash bo‘yicha chora-tadbirlar tizimini tanlash va hokazo [5].





Sinfdan tashqari ishlarni tashkil qilish ishlari, asosan, 2 ta yoʻnalishda olib boriladi (1-rasm).



*1-rasm. Sinfdan tashqari ishlarni tashkil qilish yoʻnalishlari*

Tarbiyaviy ish bu taʼlim muassasasining barcha pedagoglari zimmasidagi vazifa hisoblanadi. Shu oʻrinda sinf rahbari oʻziga birlashtirilgan sinfdan dars beruvchi oʻqituvchilarning tarbiyaviy ishlarini muvofiqlashtiradi va boshqaradi. Buni sinf rahbarining har bir oʻquvchi oilaviy sharoiti, qiziqishlari, ruhiy holati (tashvishlari, muammolari) bilan bevosita tanish boʻlganligi bilan izohlash mumkin.

Sinf rahbarining tarbiyaviy ish rejasi bu majburiy pedagogik hujjatdir. Uning rejasida birlashtirilgan sinf jamoasining darsdan tashqari boʻsh vaqtlarini mazmunli tashkil qilish masalasi fan oʻqituvchilari va ota-onalar bilan bamaslahat rejalashtirilishi maqsadga muvofiqdir. Ayniqsa fan oʻqituvchilari bilan oʻquvchilarning qiziqishlari boʻyicha kichik pedagogik yigʻilishlar tashkil qilib turish yaxshi samara beradi. Bunda tuziladigan ish rejasi choraklik, yarim va bir yillik shakllarida tuzilishi mumkin. Darsdan tashqari ishlar bolaning shaxs sifatida rivojlanish bosqichlarini belgilab olishni ham nazarda tutadi. **Darsdan tashqari tarbiyaviy ishlarni ham tashkil qilishda quyidagilarni hisobga olish maqsadga muvofiqdir:**

- ✓ bolani qadriyat sifatida bilish, undagi individuallik, oʻziga xoslikni hurmat qilish, ijtimoiy huquqlarini eʼtiborda saqlash;
- ✓ milliylikning oʻziga xos anʼana va qadriyatlariga tayanish;
- ✓ pedagoglar oʻrtasida oʻzaro hurmat munosabatlarini shakllantirish;
- ✓ Oila va mahallaning yuksak tarbiyaviy imkoniyatlari, bolalar va ota-onalarning oʻziga xos xususiyatlarini hisobga olish va h.z.

Darsdan tashqari mashgʻulotlarni tashkil qilish, avvalo oʻqituvchidan ijodkorlikni va yuksak maʼsuliyatni talab qiladi. Shu bilan birga pedagogik jihatdan mahoratli boʻlishi ham ahamiyatga ega. Sababi qiziqarli boʻlmagan zerikarli mashgʻulotlar bolani zeriktiradi va qoʻshimcha shugʻullanishga boʻlgan motivatsiyasining yoʻqolishiga sabab boʻladi. Oʻqituvchi-tarbiyachilar tarbiyaviy ishlarni tashkil qilishda quyidagi tamoyillarini asos qilib oladilar: tarbiyaviy tadbirlar oʻtkazishdan

maqsad milliy ma'naviyatni yosh avlod ongiga singdirish va e'tiqodiga aylantirishdan iborat ekanligi; tarbiya jarayonining milliy va umuminsoniy qadriyatlar bilan bog'lab bola qalbiga va ongiga ta'sir ko'rsatish; tarbiyaviy ishlarni o'quvchilar jamoasini jipslashtiruvchi omillar bilan boyitib, tarbiyani ta'lim bilan uzviylikini ta'minlash; tarbiya jarayonida bolalarni tarbiyalangan darajasini aniqlash va ijobiy tomonlarini o'stirish; bola shaxsiga hurmat va talabchanlik va h.z. O'quvchining darsdan tashqari bo'sh vaqtlarini unumli tashkil qilishi uning kelajakda kasbga to'g'ri yo'nalishida muhim ahamiyat kasb etadi. Chunki darsdan keyin bola shug'ullanayotgan mashg'ulot va to'garaklar uni maqsadli faoliyatiga zamin tayyorlaydi. Bugungi kunda umumta'lim maktablarining asosiy vazifasi o'sib kelayotgan yosh avlodni jamiyatning faol a'zosi sifatida kelgusidagi faoliyatga, biron bir soha yoki kasbning fidokor insoni sifatida tayyorlash hisoblanadi. Kasb-hunarga yo'naltirish maktab faoliyatining eng muhim vazifasi sifatida qaralishi lozim. Bu borada nafaqat maktab, balki boshqa ijtimoiy institutlar jumladan, oila, mahalla, yoshlar ittifoqi kabi ijtimoiy institutlar bunga ma'suldirlar. Darsdan tashqari mashg'ulotlarda kasbiy tarbiyaning asosiy vazifasi bolaning aqliy, axloqiy, jismoniy rivojlanishi, qobiliyatlari va iste'dodlarining ruyobga chiqishiga zamin yaratishdir.

#### **Darsdan tashqari mashg'ulotlarda kasbiy tarbiyaning asosiy vazifasi:**

- bolaning imkoniyatlari va qobiliyatlarini har tomonlama ochish;
- yoshlarni erkin fikrlashga, hayotga tayyorlash;
- o'zini idora va nazorat qilishni shakllantirish;
- o'z shaxsiy hayoiga maqsadli yondashuvning yuzaga kelishi, reja va amal birligi [6].

Kasbiy tarbiyani amalga oshirishda umuminsoniy qadriyatlar doimo diqqat markazida bo'lishi va unga amal qilishini ta'minlanishi muhim. Darsdan tashqari ishlarni tashkil qilishda o'quvchilarni kitobxonlikga yo'naltirish, o'quvchi ma'naviyati rivojlantirishda eng muhim omillardan hisoblanadi. Shu o'rinda "Tarbiya" fani o'qituvchisi fan mavzulariga qo'shimcha ravishda bola ma'naviy va axloqiy rivojlanishida muhim didaktik ahamiyatga ega adabiyotlar ro'yxatini shakllantirishi va bolalarga doimiy tavsiya berib, ularning kutubxonaga borib turishlarini nazorat qilib turishi kerak. Kitob tanlashda asosan milliy tarbiya asoslari singdirilgan "Qobusnoma", "Ijtimoiy odoblar", "Turkiy guliston yoxud axloq" yoki psixologik-motivatsion ahamiyatga ega bo'lgan adabiyotlarni o'quvchi yosh xususiyatidan kelib chiqib tavsiya qilishi lozim. Ba'zi o'quvchilar bu borada o'qituvchi beradigan yo'nalishga muhtoj bo'ladi. O'quvchilarning kitobxonlik madaniyatini shakllantirish ham darsdan tashqari ishlarning eng muhim vazifalari sifatida rejalashtirilishi lozim.



Fan o'qituvchilari va sinf rahbarlari maktab kutubxona xodimlari bilan hamkorlikda ish olib borishi, maktab yoki sinf jamoasi orasida darsdan tashqari vaqtlarda kitobxonlik tanlovlarining o'tkazilib turilishi o'quvchilarning kitobxonlikga bo'lgan rag'batini oshiradi.

Kasbiy tarbiyani zamon talablari asosida kasbiy tarbiyani zamon talablari asosida tashkil etadigan pedagog xodimlarni ushbu jarayonga tayyorlash zaruriyati mavjud. Sababi pedagog mamlakatda qaysi kasb indikatorlariga talab va extiyoj yuqori ekanligi va ushbu kasb egalari qanday kompetensiyalarga ega bo'lishi haqida tushunchalarga ega bo'lmasa maqsadga erishib bo'lmaydi. Sinf rahbarlari, fan o'qituvchilari faoliyatida kasbga yo'naltirish birlamchi vazifalar qatorida qaralishi va quyidagi tarkibiy qismlari bo'lishi lozim:

- kasbiy ta'lim;
- kasbiy faollashtirish;
- professional maslahat;
- kasbiy moslashuv.

Maktabda kasbga yo'naltirish ishlariga sinf rahbari, maktab psixologi va fan o'qituvchilari mas'ul bo'lib, ushbu jabhada sinf rahbari markaziy figura hisoblanadi. U kasbga yo'naltirish ishlarida quyidagi vazifalarni bajaradi:

1. O'quvchilarning o'z-o'zini anglashlariga yordam berish.
2. O'quvchilarning ijtimoiy foydali va samarali mehnatini tashkil etishda ishtirok etish.
3. Kasb turlari va ularning mazmuni bilan muntazam tanishtirib borish.
4. Mintaqa uchun zarur kasb indikatorlarini targ'ib qilish;
5. O'quvchining kasbiy qiziqishlari, niyatlari, imkoniyatlari, qobiliyatlarini o'rgangan holda ularni ota-onalar bilan hamkorlikda tizimli kasbga yo'naltirish.
6. Turli kasb vakillari bilan uchrashuvlar va ekskursiyalar tashkil qilish.
7. Qo'shimcha fan to'garaklarini tashkil qilish.
8. Fan o'qituvchilarning harakatlarini muvofiqlashtirish va hokazo.

Umumta'lim maktabarida o'quvchilar bilan "To'g'ri kasb tanlash nimani anglatadi?", "O'zingizni hayotga qanday tayyorlashingiz kerak?" "Mening qiziqishlarim va yuksak orzularim" mavzusida ijodiy ish va insho tanlovlari va ota-onalar bilan suhbatlar o'tkazilib turilishi maqsadga muvofiq. Bunda o'quvchilar kasb tanlashning ahamiyati haqida mushohada qiladilar. Darsdan tashqari bo'sh vaqtlarini unumli tashkil qilish birinchidan, ularning turli yomon ta'sirlarga tushib qolishidan saqlasa, ikkinchidan o'quvchi qimmatli vaqtini isrof qilinishidan saqlaydi, hamda ularning jamiyat talablariga mos tarzda ulg'ayishini ta'minlaydi. O'qitishning asosiy tashkiliy shakli



bo'lgan dars va darsdan tashqari ishlar qanday shaklda bo'lmasin ilmiy-nazariy, ilmiy-metodik va ma'naviy -ma'rifiy jihatdan to'laqonli bajarilgandagina yuksak pedagogik samarani berishi mumkin. Bunda, albatta bilim oluvchilarning yosh va fiziologik xususiyatlari, qiziqishi, bilim saviyasi, fikr yuritish doirasi hisobga olinishi lozim. Buning uchun ta'lim va tarbiya beruvchining yuqori darajasidagi pedagogik mahorati va kasbiy salohiyati talab qilinadi. O'sib kelayotgan yosh avlodning bo'sh vaqtlarini unumli tashkil qilish ular kelajagining kafolatidir.

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