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The beautiful thing about learning is nobody can take it away from you—B. B. King

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РАЗРАБОТКА МОДЕЛИ ФОРМИРОВАНИЯ РЕСУРСНОГО ПОТЕНЦИАЛА ПРОМЫШЛЕННОГО ПРЕДПРИЯТИЯ

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ABSTRACT

From a practical point of view, one of the objects of valuation activity is the enterprise. Although the enterprise is not included in the list of objects of assessment in terms of theory and legislation, in practice there is a different situation. In fact, this is an approach from a scientific and practical point of view. Because the enterprise unites all objects of assessment. In other words, as a property complex, it consists of land and other real estate, machinery and equipment, intangible assets, etc. Although this is physically or technically the case, it does not meet the requirements of the evaluation procedure. The history of the creation and development of valuation activities in our republic covers a short period. During this period, important work has been done in the direction of the formation of a scientific, methodological, practical and legislative base for the corresponding type of activity. However, this process mainly covered the scope of determining the value of real estate.
Keywords: enterprise, resource potential, digitalization, human resources.

РЕЗЮМЕ

С практической точки зрения одним из объектов оценочной деятельности является предприятие. Хотя предприятие не входит в перечень объектов оценки с точки зрения теории и законодательства, на практике наблюдается иная ситуация. По сути, это подход с научно-практической точки зрения. Потому что предприятие объединяет все объекты оценки. Иными словами, как имущественный комплекс он состоит из земли и других объектов недвижимости, машин и оборудования, нематериальных активов и т.п. Хотя это физически или технически так, это не соответствует требованиям процедуры оценки. История создания и развития оценочной деятельности в нашей республике охватывает небольшой период. За указанный период была проделана важная работа в направлении формирования научно-методической, практической и законодательной базы соответствующего вида деятельности. Однако этот процесс в основном охватывал сферу определения стоимости объектов недвижимости.
Ключевые слова: предприятие, ресурсный потенциал, цифровизация, человеческие ресурсы.

Введение

Каждое предприятие в своей деятельности сталкивается с влиянием факторов внешней среды, которые могут оказать существенное влияние на его текущее состояние и будущее развитие. Как известно, среда, в которой работает предприятие, постоянно меняется, постоянно претерпевает изменения. Поэтому в соответствии с изменениями,

происходящими во внешней среде, должны происходить или осуществляться определенные изменения на предприятии.
Любое предприятие склонно к развитию, и изменения, которые происходят и будут происходить в среде, в которой работает предприятие, также будут изменить свои цели и задачи. Также известно, что развитие предприятия становится более динамичным, когда определяются долгосрочные цели и задачи. Учет изменений внешней среды (бизнеса), определение целей развития предприятия и определение путей их достижения делает необходимым стратегический подход к развитию предприятия, что, в свою очередь, решает проблему принятия решений на предприятиях [1, с. 78].

Цель исследования
Целью исследования, проведенного в связи с темой диссертации, является определение рыночной стоимости на основе анализа источников ресурсов, используемых в деятельности предприятия, и анализа рынков сбыта, применения стандартов современных методов их оценки.

Методология
Исследование проводилось несколькими методами, первый из которых - аналитический. Этот метод широко используется в исследованиях. Второй метод - сравнительный. С помощью этого метода сравнивались исследовательские работы.

Результаты и обсуждение
Иными словами, при изменении внешней среды целесообразно выбрать наиболее эффективный для предприятия из возможных альтернативных вариантов достижения поставленной цели.

Можно сделать вывод, что основным фактором, определяющим долгосрочную успешную работу и эффективность предприятий в условиях динамичных изменений внешней среды и конкуренции, является правильная разработка стратегии их развития.
После определения стратегических целей и задач при стратегическом планировании деятельности предприятия следующим вопросом является обоснование путей достижения этих целей и задач. Для этого, прежде всего, определяются возможные альтернативные варианты достижения поставленных целей и задач, и на их основе разрабатывается соответствующая стратегия.
На первом этапе этапа разработки стратегии оцениваются конкурентные преимущества, сильные и слабые стороны, возможности и угрозы деятельности предприятия на основе данных анализа, проведенного на предыдущем этапе стратегического планирования. После этого на основе этой информации выбирается подходящая стратегия [2, с. 56].

Комплексная оценка факторов развития предприятия проводится теоретически и практически с использованием метода анализа ГЗИТ. Комплексная оценка факторов исходит из потребности предприятия знать свои сильные стороны и использовать их в соответствии с ожидаемыми изменениями в предстоящий период, кроме того, каждое предприятие должно принимать решения по устранению своих слабых сторон или уменьшению возможных негативных последствий.

В целом предприятию следует принимать решения о действиях, которые необходимо выполнить, своевременно оценивая, какие дополнительные возможности создают для него изменения во внешней среде. Кроме того, предприятию следует оценить угрозы и их негативные последствия, вызванные изменениями внешней среды, и ускорить снижение или устранение таких последствий. Именно на основе такой оценки предприятие может определить свою стратегию достижения поставленной цели. При комплексном анализе и оценке среды деятельности предприятия используется метод анализа ГЗИТ и связанные с ним методы [3, с. 90].

Концепция ГЗИТ-анализа была впервые озвучена профессором Кеннетом Эндрюсом, а его матрица была представлена на международной конференции по проблемам деловой политики, проходившей в Гарвардском университете в Америке в 1963 году. Это понятие было образовано из начальных букв слов, которые оно выражает - как аббревиатура. С этого времени концепция ГЗИТ-анализа широко используется как важный инструмент оценки в научных исследованиях и практике. Фактически, в результате предложения модели анализа ГЗИТ аналитики получили ценный инструмент для реализации своей научной и практической работы. Вышеупомянутое создало им условия для представления развернутых и бессистемных представлений о предприятии и его конкурентных возможностях в виде логической схемы взаимовлияния сильных и слабых сторон, возможностей и угроз [2, с. 99].

На заре аналитических инструментов они в основном использовались для группировки знаний о текущем состоянии и тенденциях изменений. Но со временем его начали использовать при разработке различных стратегий. В настоящее время метод анализа ГЗИТ используется в аналитических исследованиях с различными целями. В желтый период анализ ГЗИТ широко используется при стратегическом планировании деятельности коммерческих организаций, государственных и муниципальных органов, общественных объединений и центров, вузов и научных центров.

Как было сказано ранее, применение модели анализа ГЗИТ позволяет выявить сильные и слабые стороны предприятия, а также потенциальные возможности и угрозы, которые возникнут во внешней среде, их систематизацию и структурирование. Это, в конечном итоге, создает основу для разработки и реализации стратегии развития компании. При этом анализ ГЗИТ является основой выбора стратегии развития предприятия на основе целенаправленной систематизации фактов, выявленных в результате анализа перспективных направлений развития предприятия, а также факторов внешней и внутренней среды. в своей деятельности [1, с. 78].

Таким образом, при разработке стратегии развития предприятия в общих разрезах между сторонами матрицы анализа ГЗИТ ищутся ответы на следующие вопросы.

	Возможности (В)	Угрозы (У)
Сильные стороны (С)	Достаточно ли сильных сторон для достижения цели, используя потенциальные возможности?	Достаточно ли сил для преодоления ожидаемых угроз при движении к цели?
Слабые стороны (С)	Мешают ли эти слабости вам воспользоваться потенциальными возможностями, работая над достижением цели?	Мешают ли эти слабости вам избегать опасностей, которые ожидаются в ходе действий по направлению к цели?

При применении модели уравнения ГЗИТ необходимо соблюдать некоторые правила, а именно [3, с. 78]:
Определение цели и объема анализа ГЗИТ. Указание цели анализа гарантирует получение более реалистичных результатов. Следует также отметить, что наблюдаются различия в результатах анализов ГЗИТ, проводимых для разных целей на одном и том же предприятии.

Уточнение различий между элементами матрицы анализа ГЗИТ. Отметим, что сильные и слабые стороны являются внутренними показателями предприятия. Поэтому есть возможность контролировать их предприятием. Однако тот факт, что возможности и угрозы являются индикаторами внешней среды предприятия, означает, что они остаются вне прямого влияния предприятия.
Сильные и слабые стороны воспринимаются как таковые непосредственными покупателями и конкурентами. Точнее, следует выявить сильные и слабые стороны в сравнении с показателями конкурентов.

Объективность анализа ГЗИТ, основанного на полной и достоверной информации.
Избегание необоснованных и двусмысленных интерпретаций при применении анализа ГЗИТ. Это связано с мнением, что включение в анализ факторов, которые не считаются важными для потребителей и конкурентов, повредит результату.
Для построения матрицы анализа ГЗИТ и разработки стратегии эти признаки ранжируются по степени важности, и из них выбираются три наиболее важных.
Каждое предприятие стремится добиться конкурентного преимущества в своей деятельности. Конкурентное преимущество обычно обеспечивается важными для конкретного бизнеса активами предприятия и наличием у него особых компетенций. Здесь достижение лидерства по себестоимости продукции также является одним из основных условий.

Стратегия минимизации затрат служит для обеспечения более низкого уровня себестоимости продукции по сравнению с конкурентами. Если это обеспечено, можно продавать товар по более низким или сопоставимым ценам по сравнению с конкурентами. Применение данной стратегии оправдано в том случае, если общие средние издержки предприятия меньше соответствующего показателя конкурента.

Выводы
Исходя из опыта, полученного на предприятиях, выпускающих продукцию большими партиями или сериями, лидерство по издержкам требует снижения издержек, постоянного и жесткого контроля затрат, исключения заказов от мелких заказчиков, а также требования минимизации затрат на разработку, обслуживание, продажу и рекламу. Компании, предпочитающие эту стратегию, производят продукцию крупными партиями и предлагают более низкие цены, чем компании, производящие продукцию мелкими партиями [4, с. 89].

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DAYANIQLI İNKİŞAFIN TƏMİN EDİLMƏSİNDƏ İSTİFADƏ OLUNAN QƏRAR QƏBULETMƏ MODELLƏRİNİN TƏTQİQİ

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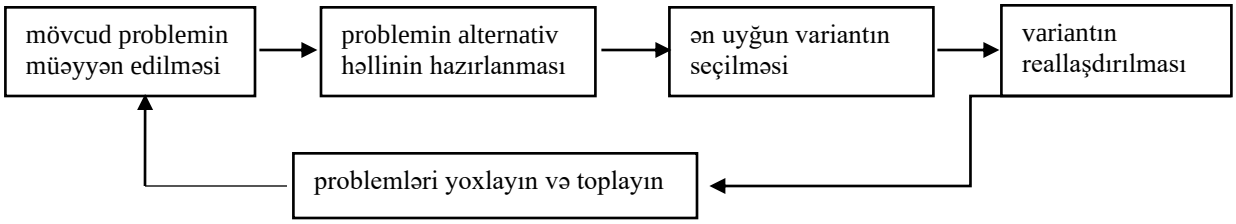
XÜLASƏ

Qərar vermə prosesi bugünkü təşkilatlarda idarəetmənin ən vacib elementlərindən biridir, çünki o, təşkilatın uğur və ya uğursuzluğuna təsir edir. Çox qeyri-müəyyən bir mühitdə qərar qəbul etmə prosesinə təsir edən amilləri bilmək vacibdir. Tədqiqatın məqsədi qərar qəbul etmə prosesinə hansı determinantların təsir etdiyini öyrənmək idi. Təşkilatlarda qərarların qəbulu prosesi müxtəlif amillərlə müəyyən edilir: iqtisadi, sosial, təşkilati, şəxsi və psixoloji. Aparılmış araşdırmalara görə, respondentlər iqtisadi və təşkilati amilləri ən vacib hesab ediblər. Menecerlər qərar qəbul etmə prosesinə təsir edən ən mühüm iqtisadi amillər kimi şirkətin sahib olduğu resursları, onun biznes məqsədini və təsərrüfat hesabını müəyyən etdilər. Rəhbərlik üslubu və təşkilati struktur qərar qəbulunun səmərəliliyinə ən çox təsir göstərir.
Məqalədə qərar qəbuletmə modellərinin mövcud olan və mövcud ola biləcək problemlərinin həllində rolu tədqiq edilmiş, sənaye müəssisələrində dayanıqlı inkişafın təmin edilməsinin vacibliyi önə sürülmüşdür.
Açar sözlər: qərar, qərar qəbuletmə, sənaye müəssisəsi, qərar qəbuletmə modellərinin tətqiqi, qərarın qiymətləndirilməsi.

Giriş

İdarəetmə qərarlarının qəbulu, şirkətdə həll edilməli olan problemin formalaşdırılması və müəyyən edilməsindən məqsədə aparan dəqiq müəyyən edilmiş sistematik addımlardan və fəaliyyətlərdən ibarət çox vacib bir prosesdir və məqsəd üçün optimal həll yolunu seçməkdir. Buna görə də qərar vermə prosesi menecerlərin şirkətlərdə həyata keçirdikləri ən vacib fəaliyyətlərdən biridir. O, intuitiv şəkildə həyata keçirilə bilər və çox vaxt deterministik qərar problemlərində olduğu kimi, qərar qəbul edən şəxsin empirik təcrübəsinə əsaslanır. Şirkətin ətraf mühitindəki dəyişikliklərin artan dinamikası ilə mürəkkəbliklə birlikdə menecer getdikcə qeyri-müəyyənlik şəraitində qərar verməyə məcbur olur, burada nəinki ətraf mühitin vəziyyətinin necə olacağını bilmir.
İndi menecerlər keçmişdə, məsələn, keçən əsrdə olduğundan daha çox təzyiq altındadırlar. Bu, qlobal bazarda biznes üçün dəyişən şərtlərlə bağlıdır. Onlar ətraf mühitin təzyiqinə məruz qalırlar. Bu təzyiq bütün müəssisə və təşkilatlara təsir edən daim dəyişən xarici amillərdən qaynaqlanır. Qloballaşma, texnologiyalar və onların sürətli inkişafı sivilizasiyanın əsas meqatrendləridir. Hazırda rəqabət davamlı bazar dəyişikliklərini əhatə edir, halbuki bu dəyişikliklərin tezliyi durmadan artır, məhsul və texnologiya yeniliklərini, müasir idarəetmə sistemlərini, biznesin idarə edilməsində yenilikləri və s. sürətləndirir. Belə mürəkkəb və çətin şəraitdə menecerlər qərarlar qəbul etməlidirlər. Deyə bilərik ki, məhz belə bir mühitdə menecerlərdən düzgün qərar qəbul etmələri üçün tələblər və təzyiqlər təbii olaraq artır. Qərar vermə prosesində fəaliyyətlərin təsviri göstərilir.



Şəkil 1. Qərarqəbuletmə prosesi

Hər kəsin qərar qəbul etməsi üçün o, ilk növbədə bunu etmək üçün lazımi səlahiyyətlərə malik olmasını təmin etməlidir. İdarəetmədə biz qərar qəbulunun üç növünü bilirik:

- Rasional;
- Kortəbii;
- İntuitiv.

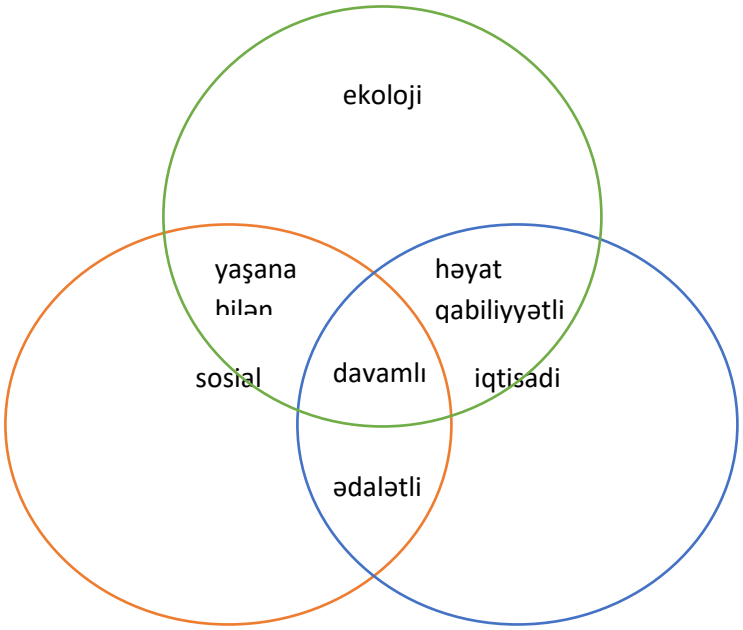
Menecerlərin qəbul etdiyi bütün qərarlar rasional olmalıdır. Menecerin qərar qəbul etmə prosesində rasionallıq elementi idarəetmə funksiyasının yerinə yetirilməsi üçün vacib şərtdir. Rasionallığın elementlərinə aşağıdakılar daxildir:

- **Ardıcıllıq.** Qərarların qəbulu prosesində atılan addımlar təşkilatın maraqlarına yönəldilir və konkret təşkilatın məqsədlərinə nail olunması ilə bağlıdır.
- **Obyektivlik və məntiq.** Qərarlar təşkilatın ən yaxşı məqsədinin maraqlarına uyğun olaraq həyata keçirilir. Təşkilatın məqsədlərinə üstünlük verilir, şəxsi maraqlara üstünlük verilmir.
- **Məntiqi.** Təşkilatdakı bütün məqsədlərin, o cümlədən onların spesifikliyi, ölçülə bilənliyi və digərlərinin məntiqi təşkili.

Dayanıqlı inkişafın təmin olunması üçün qərar qəbuletmə modellərinə ölkə çərçivəsindən də baxmaq lazımdır. “Dayanıqlı inkişaf daha dayanıqlı dünyaya nail olmaq istəyən inkişaf etməkdə olan ölkələrin ehtiyaclarını ödəməyə çalışan inkişafdır. Davamlı inkişaf indiki və gələcək nəsillərin öz davamlı həyat tərzlərinə cavab verməsi üçün təhlükə yaratmadan indiki anın ehtiyaclarını qarşılayır”.

Davamlı inkişaf iş dünyasında korporativ siyasətə tətbiq oluna bilər, çünki o, üç əsas sahəni əhatə edir: iqtisadi, ekoloji və sosial. Davamlı inkişaf şirkətin iqtisadi artıma, sosial tərəqqiyə töhfə verməsini və ekoloji davamlılığı təşviq etməsini tələb edir. Davamlı inkişafın üç əsas sahəsi aşağıdakı əhəmiyyət sırasına görə sıralanır: ətraf mühitin mühafizəsi, iqtisadi inkişaf və sosial davamlılıq.

Davamlı inkişafın üç sütunu bəşəriyyətin üzləşdiyi ən böyük problemləri və onların bir-birinə necə təsir etdiyini daha aydın başa düşmək üçün diaqramdan istifadə etməklə təsvir edilə bilər.



Şəkil 2. Davamlı inkişafın üç sütunu

Qərar ani bir hadisə deyil. Bu, müxtəlif mərhələlərdən keçən bir prosesdir. Ümumi mənada proses müəyyən bir sonluğa aparan hərəkət və işlərin məcmusudur. Odur ki, effektiv qərara çatmaq üçün qərar qəbuletmə prosesinin hansı mərhələlərdən ibarət olduğunu bilmək lazımdır. Qərar vermə prosesinin mərhələlərini aşağıdakı kimi sıralamaq olar:

- Problemi tanımaq;
- Problemin müəyyən edilməsi və müəyyən edilməsi;
- Alternativlərin müəyyən edilməsi;
- Alternativlərin qiymətləndirilməsi;
- Ən yaxşı alternativin müəyyən edilməsi;
- Qərarın qiymətləndirilməsi.

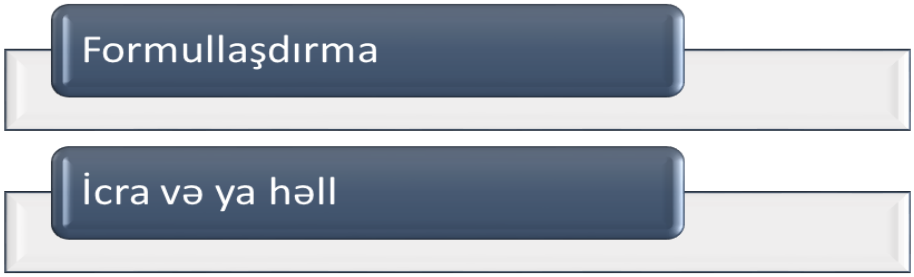
İnnovasiyaların formalaşması və saxlanmasında maraqlı olan müəssisələrin inkişafı və çiçəklənməsi effektiv proqramlaşdırılmış qərarlar qəbul etmədən mümkün deyil. Lakin risk, qeyri-müəyyənlik və gözlənilməzlik şəraitində qəbul edilən bir çox qərarlar istənilən nəticəni vermir. Yalnız etibarlı proqnozlaşdırmanın yaradıcı yollarını axtarmaq,məlumatın natamamlığını, uyğunsuzluğu, qeyri-aşkarlığını aradan qaldırmaqla alternativ variantların müzakirəsi üçün ağlabatan ssenarilər hazırlamaq mümkün olur.

Mövcud klassik, inzibati və siyasi qərar qəbuletmə modelləri menecerlərə fərdi və kollegial üstünlüklərdən, qərarın proqramlaşdırıla bilməsindən, onun xas risk və qeyri-müəyyənlik dərəcəsindən asılı olan seçim imkanı verir.

Klassik modelin mahiyyəti onun qərar qəbul edənlərə ardıcıl şəkildə tətbiq oluna bilən aydın prinsip və qaydaların işlənib hazırlanmasında daha rasional olmasına kömək etməkdən ibarətdir. Menecerlərə hadisələrin baş vermə ehtimalını hesablamağa imkan verən müvafiq məlumatlar olduqda, müəssisənin iqtisadi maraqlarına ən yaxşı cavab verən qərarlara adekvatdır.

İnzibati model təşkilati amillərə diqqət yetirir və cari problemlərin həllinə inanmağa imkan verən sürətli mümkün hərəkətlərin real prosesini əks etdirir. Məhdud insan, informasiya, maddi

resusrslar şəraitində rasionallıq və intuisiyanı efektiv qərar qəbul etməyin vacib kompenentləri kimi nəzərə alaraq balanslaşdırılmış yanaşmadan istifadə etmək məqsədəuyğundur. Eynilə, bəzən menecerlər bəzən qənaətbəxş nəticə verənə qədər mürəkkəb problemlərə alternativ həll yolları axtarırlar.
Siyasi modeldən istifadə, problemlərin prioriteti və onların həlli yolları ilə bağlı fikir ayrılıqları və konfliktlərin normal hesab edilməsi şərtilə, menecerlər arasında konkret məqsəd və ya davranış xətti haqqında konsensus olmadıqda qrup proqramlaşdırılmamış qərarlar qəbul etmək üçün faydalıdır. Nəticələr gözlənilməz olduqda, menecerlər koalisiya qurmaqla müəyyən məqsəd üçün dəstək qazana bilirlər.
Əslində qərar qəbulu ayrı bir idarəetmə fəaliyyəti olmaqdan daha çox bütün idarəetmə fəaliyyətinin əsasını təşkil edən elementdir. Qərar qəbul etmənin 2 aspekti var: iş və proses. Qərar qəbuletmə prosesi isə 2 kateqoriyaya bölünür:



Şəkil 3. Qərar qəbuletmə prosesinin 2 kateqoriyası

1) Formullaşdırma: Problem və ya fürsəti müəyyən etmək, bu barədə məlumat əldə etmək, arzu olunan bacarıqlarını inkişaf etdirmək və problemə və ya fürsətə təsir edən amillərin səbəblərini və əlaqəsini analiz etmək faktlarını əhatə edir.

2) İcra və ya həll: Bu, alternativlərin yaradılması,üstünlük verilən həll yolunun seçilməsi və qərarın həyata keçirilməsi kimi məsələləri ehtiva edir.Həllin həyata keçirilməsindən sonra idarəçi qərarın nə qədər uğurlu olduğunu müəyyən etmək üçün vəziyyəti qiymətləndirir.
Ənənəvi olaraq tədqiqatçılar qərar qəbuletmə prosesini problemləri həll etmək üçün qruplar və ya fərdlər tərəfindən atılan analitik addımlar kimi ifadə edirlər. Qərar qəbulu üçün analitik model kimi tanınan ümumi model qərarların qəbulunun mürəkkəb təbiətini anlamağa kömək edə bilir.
Analitik qərar qəbuletmə prosesinin ilk addımı problemin müəyyən edilməsidir. Problemi necə həll edəcəyinə qərar verməzdən əvvəl onun müəyyənləşdirilməsi lazımdır. Ancaq bu addım bəzən çox problemli ola bilər. Əslində, insanlar tez-tez problemin mövcudluğuna dair bəzi ipuclarını görmürlər. Ona görə də problemi görə bilməmək əslində onun həllinə ilk maneədir. Bu çərçivədə bütün işçilərin qərar qəbuletmə mexanizminə daxil edilməsi problemlərin vaxtında görülmə ehtimalını artıracaq. Bir çox müəssisələrin problemləri vaxtında müəyyən edə bilməməsinin ən mühüm səbəblərindən biri işçilərin prosesdə kifayət qədər iştirak etməməsidir. Qərarların qəbulu prosesinə bütün işçilərin daxil edilməsi həm də işçilərin sədaqətini artıracaq.
Problem müəyyən edildikdən sonra növbəti addım problemi həll etmək üçün qarşıya qoyulacaq məqsədləri müəyyən etməkdir. Problemləri müxtəlif həll variantlarını müəyyən edəcək şəkildə təqdim etmək son dərəcə vacibdir. Problemin hər bir həlli bu məqsəd baxımından

qiymətləndirilməlidir. Bu nöqtədə, bütün proses üçün lazım olan adekvat bilik bazası və axınının olması faktı daha çox əhəmiyyət kəsb edir.
3-cü addım ilkin qərar qəbul etməkdir. İlkin qərar problemin həllində hansı proseslərin izlənəcəyi ilə bağlı qərardır. Müəyyən edilmiş problemin tipini və vəziyyətin digər aspektlərini nəzərə alaraq, idarəçilər qərarı özlərinin verməsinin lazımlılığını, yaxud bir başqasına və ya komandaya həvalə edilməsinin uyğun olacağına qərar verə bilərlər.
Prosesin 4-cü mərhələsi mümkün həllərin təyin olunduğu alternativlərin yaradılmasıdır.

4-cü mərhələdə müəyyən edilmiş alternativlərin hamısı həyati qabiliyyətli olmadığı üçün bu alternativlər 5-ci mərhələdə qiymətləndirilməlidir.
Burada edilməli olan ən yaxşı həll variantının hansı olduğuna qərar verməkdir. Bu nöqtədə, müəssisənin qərar qəbuletmə prosesinin hər mərhələsində dəstəkləyici və gəlişdirici qərar dəstək sistemlərindən faydalanmaq xüsusi əhəmiyyət kəsb edəcəkdir.

6-cı addımda seçim edilir.
Növbəti addım seçilmiş alternativin həyata keçirilməsini və ya yerinə yetirilməsini əhatə edir və sonuncu mərhələdə həyata keçirilən qərarların effektivliyi qiymətləndirilir.
İxrac potensialında artım dinamikasının vacibliyini izah etmək üçün müxtəlif alqoritmlərdən istifadə etmək olar. Bunlardan biri də "Greedy" alqoritmidir.
Acgöz alqoritm hər mərhələdə yerli optimal seçim etmək üçün problemin həlli evristikasına əməl edən istənilən alqoritmdir. Bir çox problemdə acgöz strategiya optimal həlli vermir, lakin acgöz evristik ağlabatan vaxt ərzində qlobal optimal həlli təxmin edən yerli optimal həllər verə bilər. Məsələn, səyyar satıcı problemi üçün (yüksək hesablama mürəkkəbliyi olan) acgöz strategiya aşağıdakı evristikdir: "Səfərin hər addımında ən yaxın ziyarət edilməmiş şəhəri ziyarət edin." Bu evristik ən yaxşı həlli tapmaq niyyətində deyil, lakin məqbul sayda addımlarla başa çatır; belə mürəkkəb problemin optimal həllinin tapılması adətən əsassız bir çox addımlar tələb edir. Riyazi optimallaşdırmada acgöz alqoritmlər matroidlərin xassələrinə malik kombinatorial məsələləri optimal həll edir və submodul strukturu ilə optimallaşdırma məsələlərinə sabit faktorlu yaxınlaşmalar verir.
Greedy alqoritmi tapşırıq anlayışından və onların icrası zamanı prioritet xüsusiyyətlərin həyata keçirilməsi üçün əhəmiyyətliliyin inteqral göstəricisindən istifadə edir. Alqoritmin əvvəlində bütün vəzifələrlə əlaqəli xərc dəyəri tapşırığı yerinə yetirmək üçün lazım olan fayllar əsasında hesablanır. Tapşırıqların ümumi dəyəri verilən tapşırıqları yerinə yetirmək üçün lazım olan bütün faylların dəyərinin cəmindən ibarətdir.

$$f_{icost}=\sum_{k=0}^{i}\frac{Ck}{Tksum} \qquad (1)$$

burada, ck- k tapşırığının vacibliyi; l – i faylinin aid olduğu tapşırıqlar; $Tksum$ - k tapşırığındakı bütün faylların cəmini göstərir. Sonra bütün tapşırıqlar xərclərinə görə sıralanır. Hər bir tapşırıqdakı fayllar da xərclərə görə sıralanır. Beləliklə, iki meyara görə sıralanan faylların siyahısı əldə edilir: tapşırığa mənsubiyyətə görə dəyəri və ifadə şəklində dəyəri. Alqoritm, faylların siyahısını iki səviyyəli çeşidləmə vasitəsi ilə əldə edilən qaydada emal edir. Bu səbəbdən, ilk növbədə ən vacib tapşırıqlar olan fayllar üçün optimallığın qiymətləndirməsi funksiyası işlənəcəkdir Bu alqoritm işin sürətini artırmaqla keyfiyyətli həllin əldə edilməsinə

imkan verir. Lakın, problemin mürəkkəb xüsusiyyətlərinə və alqoritmin birtərəfli evristik məntiqinə görə həll yollarının axtarışının nəticəsi yalnız kifayət qədər sadə hallarda optimala yaxın olur və mürəkkəb məsələlərdə isə optimaldan kənarlaşır.

"Greedy" alqoritminin mənası acgöz alqoritm deməkdir. Yəni maximum dəyərlərdən istifadə edərək məsələnin həll yollarının tapılmasına gətirib çıxarır. Məsələn bunu bir misal üzərində izah edək. Azərbaycan Respublikasında 2022-ci il üzrə ixrac qabiliyyeti yüksək nisbətdə olan bir neçə neft məhsullarına baxaq. Bunlar xam neft 49.49, təbii qaz 42.21, neft koksu 0.13, neft bitumu 0.07 və s. kimi sıralanır. Nəzərdə tutaq ki, bu nisbətlərin maximum dəyəri 100 olmalıdır. Burada biz greedy alqoritmindən istifadə edərək ilk öncə xam neft və təbii qazın ixracına fokuslanacağıq. Çünki daha az çeşidlə və xərclə daha tez 100 nisbətini tamamlaya bilirik. Əlbəttə ki digər alternativ məhsullar da analiz edilməlidir. Çünki bu alqoritm hər zaman özünü doğrultmaya bilər.

Sənaye müəssisəsinin innovativ inkişafı dövlətin iqtisadi siyasətinin həyata keçirilməsinin əsasını təşkil edir. Strateji idarəetmə və istehsalın planlaşdırılması dərsliklərində SWOT-analizinin aparılması üçün müxtəlif üsullar mövcuddur. Bu üsulların əhəmiyyətli bir çatışmazlığı var, yəni etibarlı ekspert qiymətləndirmələrinin alınması, eləcə də onların işlənməsi problemi. Bu problemi həll etmək üçün təklif olunur. SWOT diaqramlarından və ya matrislərindən istifadə edərək SWOT-analiz təşkilatın istənilən planlaşdırma fəaliyyətinin əsas hissəsidir. SWOT güclü, zəif tərəflər, imkanlar və təhdidlərin abbreviaturasıdır. Güclü və zəif tərəflər daxili amillərdir, imkanlar və təhlükələr isə xaricidir. SWOT-chart (sxem) təşkilatın inkişafının asılı olduğu hər bir amili nəzərə alaraq innovativ layihəni təhlil etməyə imkan verir.

Qərar qəbuletmə modelləri ümumiyyətlə rasional qərar qəbuletmə modeli, məhdul rasional qərar qəbuletmə modeli və davranış qərar qəbuletmə modelləri kimi ifadə edilir. Bundan başqa, qərarlar proqramlaşdırılmış və proqramlaşdırılmamış qərarlar kimi də təsnif edilir. Proqramlaşdırılmış qərar sadə və ya rutin problemə standart cavabdır. Problemin mahiyyəti qərar qəbul edən şəxs tərəfindən yaxşı müəyyən edilir və başa düşülür. Belə qərarlarda konkret qiymətləndirmə meyarı müəyyən edilir və bu göstərici əsasında qərar qəbul edilir. Proqramlaşdırılmış qərar qəbuletmə modeli həm problemin müəyyən edilməsi, həm də həlli baxımından yüksək dərəcədə əminliyə malikdir.

Proqramlaşdırılmamış qərar yaradıcı həll tələb edən yeni və mürəkkəb bir qərardır. Məsələn maliyyə resursları məhdud olan müəssisə bazar payını artırmaq və artan müştəri tələblərini daha effektiv şəkildə qarşılaya bilmək üçün iş həcmini artırmalıdır?

Proqramlaşdırılmamış qərarlarda heç bir alternativ tamamilə düzgün deyil və keçmiş qərarlar kömək etmir. Qərar verən şəxs alternativləri və onların nəticələrini qiymətləndirərək əvvəllər qəbul edilməmiş bir qərar verməlidir.

Rutin qərarların qəbulu əvvəlcədən müəyyən edilmiş təşkilati təcrübələrin və ya qaydaların istifadəsinə əsaslanır. Rutin qərar qəbuletmə modelindən istifadə edərək idarəçilər nəyi necə edəcəyini əvvəlcədən müəyyən edilmiş prosesi izləyirlər. Prosesdə dəqiq müəyyən edilmiş məqsədlər, məlumat mənbələri və qərar qəbuletmə qaydaları var. Rutin qərarların qəbulu təkrarlanan və proqramlaşdırılmış qərarlar üçün uyğun qərar qəbuletmə modelidir və bu model yuxarı səviyyəli idarəçilər üçün deyil, prosesi əvvəlcədən müəyyən edilmiş çərçivə daxilində həyata keçirə bilən aşağı səviyyəli işçilər tərəfindən həyata keçirilməlidir.

Adaptiv qərar qəbuletmə modeli mühakimə və qiymətləndirməni özündə cəmləşdirən modeldir. Heç bir komputer proqramının istehsal edə bilməyəcəyi bir qərar vermək öhdəliyi var. Müəyyən mühakimələr qəbul edildikdən sonra bu model daxilində bir sıra əsas kəmiyyət qərar qəbuletmə alətlərindən istifadə etməklə qərar qəbul edilə bilər.

İnnovativ qərar qəbuletmə modeli isə daha əvvəl heç vaxt ortaya çıxmamış bir vəziyyət və ya problem olduqda və yeni bir həll yolu təqdim edilməli olduqda izlənilməli olan qərar qəbuletmə modelidir. İnnovativ qərar qəbuletmə modeli problemin həlli yanaşmasının nəticəsidir və onun məşğul olduğu qərarlar bilinməyənlərlə bağlıdır. Təşkilatlarda belə qərarlar nadir olsa da, mövcud ekoloji şəraitdə fəaliyyət göstərən müəssisə rəhbərləri bu modelə uyğun hərəkət etməlidirlər.
Xarici mühitin qeyri-sabitliyi, müəssisənin sağ qalmasını təmin etmək üçün artan tələblər, kritik vəziyyətdə adekvat və tez reaksiya vermək ehtiyacı müasir sənaye müəssisəsini idarə etməyin yeni yol və üsullarını axtarmağı zəruri edir. Bu üsullardan biri nəzarət sistemi modelidir.

Nəticə

Hazırda iqtisadiyyat sahəsində müxtəlif problemlərin həlli üçün sistem təhlili üsullarından tez-tez istifadə olunur. Bununla belə, ədəbiyyatda sənaye müəssisəsində nəzarət tapşırıqlarının təhlili üçün bu üsulların kifayət qədər tətbiqi yoxdur.
Sənaye müəssisələrində çevik qərarlar qəbul edib hərəkətə keçmək hər zaman uğurlu nəticələr qazandırır. Onların axtardığı həllər yeni şəraitə tezliklə uyğunlaşa bilmək xüsusiyyətinə malik olmalıdırlar və buna görə də bir sənaye müəssisəsində hər şeyin tam dəqiq və artan yolla inkişafını görmək istəyiriksə, müəssisələrdə idarəetmə, qərarların qəbulu modellərini və bu modellərdən hansının həmin anda verilməsi uyğundursa, onun tətbiqinə düzgün riayət etmək həmin müəssisəni nəinki böhranlı, kritik vəziyyətdən çıxarır, eyni zamanda da onun inkişafı üçün şərait yaradır.
Bu cür problemlərin həllinə sistemli yanaşma modeli aktualdır, çünki bu, sənaye müəssisəsindəki nəzarət sistemini və xüsusən də idarəetmə qərarının qəbulu problemini yeni bir baxışdan nəzərdən keçirməyə imkan verir. Sagatovsky texnikasının (SWOT) köməyi ilə sənaye müəssisəsində nəzarət modelinin formalaşması, idarəetmə qərarının qəbul edilməsi prosesi və sənayedə nəzarətin yeri ilə əlaqədar olaraq, nisbətən tam tapşırıqlar toplusunun formalaşdırılması problemi həll olunur.

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A STUDY OF DECİSİON-MAKİNG MODELS USED İN ENSURİNG SUSTAİNABLE DEVELOPMENT

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ABSTRACT

The decision-making process is one of the most important elements of management in today's organizations because it affects the success or failure of the organization. In a highly uncertain environment, it is important to know the factors that influence the decision-making process. The purpose of the study was to find out what determinants influence the decision-making process. The decision-making process in organizations is determined by various factors: economic, social, organizational, personal and psychological. According to the conducted research, respondents considered economic and organizational factors to be the most important. Managers identified the company's resources, its business objective, and its economic balance as the most important economic factors influencing the decision-making process. Leadership style and organizational structure have the greatest influence on the efficiency of decision making.
In the article, the role of decision-making models in solving existing and possible problems was studied, and the importance of ensuring sustainable development in industrial enterprises was put forward.
Keywords: decision, decision-making, industrial enterprise, study of decision-making models, decision evaluation.

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РАЗРАБОТКА ПРОГРАММЫ ЦИФРОВОЙ ТРАНСФОРМАЦИИ ТРАНСПОРТНЫХ ПРОЦЕССОВ ПРИ ОРГАНИЗАЦИИ ДОСТАВКИ ГРУЗОВ В МУЛЬТИМОДАЛЬНОМ СООБЩЕНИИ

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РЕЗЮМЕ

В статье рассмотрены процессы цифровой трансформации бизнес-процессов и клиентских сервисов в транспортной отрасли. Определены основные положения стратегии цифровой трансформации железнодорожного транспорта, выделены основные направления, в первую очередь подлежащие совершенствованию с точки зрения прозрачности и управляемости. Рассмотрены примеры цифровых продуктов и преимущества от их внедрения. Также в работе проанализированы бизнес-процессы транспортных подразделений, реализуемые с помощью использования цифровых платформ.
Ключевые слова: цифровая трансформация, цифровые технологии, транспортные процессы, РЖД, цифровизация.

ABSTRACT

The article considers the processes of digital transformation of business processes and customer services in the transport industry. The main provisions of the strategy for the digital transformation of railway transport are determined, the main areas are identified, primarily to be improved in terms of transparency and manageability. Examples of digital products and the benefits of their implementation are considered. The paper also analyzes the business processes of transport departments, implemented through the use of digital platforms.
Keywords: digital transformation, digital technologies, transport processes, Russian Railways, digitalization.

РЕЗЮМЕ

У статті розглянуто процеси цифрової трансформації бізнес-процесів та клієнтських сервісів у транспортній галузі. Визначено основні положення стратегії цифрової трансформації залізничного транспорту, виділено основні напрямки, що в першу чергу підлягають удосконаленню з точки зору прозорості та керованості. Розглянуто приклади цифрових продуктів та переваги від їх впровадження. Також у роботі проаналізовано бізнес-процеси транспортних підрозділів, що реалізуються за допомогою цифрових платформ.

Введение

Отечественная транспортная отрасль, чтобы обеспечить эффективную деятельность на рынке, а также рост национального транзитного потенциала, должна непрерывно развиваться, повышать качество обслуживания пассажиров, скорость пассажирских и грузовых перевозок. Это, в свою очередь, требует обновления корпоративной культуры ж/д транспорта в сфере управления, а также инновационного развития сферы транспортных и логистических услуг.

ОАО «РЖД» предпринимает шаги как по внедрению инновационных технологий в своей деятельности, так и по модернизации корпоративной культуры, расширению ассортимента предлагаемых услуг и разработке принципиально новых, эффективных бизнес-процессов. [1]

Все составляющие логистического процесса в транспортной отрасли подвержены цифровой трансформации. Более 50 проектов, в соответствии с текущей стратегией, будут реализованы в различных сферах; при этом планируется использование передовых отечественных разработок на основе цифровых технологий (распределённые реестры, хранение и управление «big data», квантовые вычисления, промышленный «интернет вещей» и т.д.).

В утверждённой правительственным Распоряжением № 1632-р от 28.07.2017 г. Программе «Цифровая экономика РФ» определена, в целом, государственная политика в сфере цифровых технологий. Одна из основных целей Программы состоит в обеспечении в стране формирования экосистемы цифровой экономики, в рамках которой цифровые данные рассматриваются как главный производственный фактор, влияющий на все социально-экономические сферы, а также обеспечивается эффективное сотрудничество между государством, населением, научным сообществом и представителями бизнеса (в том числе на международном уровне). [2] Все производственные отрасли, включая транспортную логистику, на текущий момент вовлечены в процессы цифровизации. Советом директоров ОАО «РЖД», в рамках реализации государственной программы от 28.10.2019 г., была утверждена рассчитанная до 2025-го года «Стратегия цифровой трансформации компании» (далее – Стратегия) [1], утверждающая концепцию и основные принципы связанных с цифровизацией экономики преобразований и определяющая приоритетные направления процесса цифровизации (в том числе по импортозамещению в сфере IT и разработке технологий, необходимых для модернизации отрасли). Компания, согласно Стратегии, должна достичь нового уровня в инновационном процессе и стать полноправным участником технологической революции.

Методология

Исследование программы цифровой трансформации транспортных процессов осуществлялось с использованием методологии системного подхода и принципов логистики. Были использованы общенаучные методы, к примеру, анализ и синтез. Метод анализа позволил выявить проблему и выделить в ней основные составляющие, а синтез – определить основные направления разрешения текущих проблем.

К методам эмпирического познания относятся описание, сравнение, измерение. На основе анализа имеющихся литературных источников проведена сравнительная характеристика направлений цифровой трансформации.

Результаты и обсуждение

ОАО «РЖД» в ходе разработки стратегии цифровизации уделяет значительное внимание указанным вопросам, поскольку переход к цифровым технологиям требует качественных изменений как в корпоративной культуре, так и в осмыслении кадрового потенциала. В данном случае основная цель состоит в определении наиболее перспективных направлений совершенствования бизнес-процессов, а также процессов цифровизации транспортной отрасли в целом.

Следует учитывать, что под технологической революцией подразумевается не простое обновление, а масштабные изменения, способствующие кратному снижению цен на услуги. В этой связи основными задачами в отрасли на данный момент являются следующие:

1) анализ процессов внедрения в ж/д отрасли цифровых платформ;

2) разработка и внедрение инновационных цифровых методов совершенствования бизнес-процессов.

В современном мире все повседневные процессы непосредственно связаны с использованием цифровых технологий. Обеспечение максимальной эффективности транспортной деятельности подразумевает необходимость масштабного перехода к использованию автоматизированных систем, способствующих повышению эффективности решений, принимаемых персоналом, рациональному управлению процессами производства в режиме реального времени, а также объективному прогнозированию за счёт моделирования ситуаций. Такие возможности обеспечиваются за счёт внедрения и применения автоматизированных систем, основанных на передовых научных разработках в сфере управления бизнес-процессами с помощью ИИ. За счёт использования таких технологий не только будет повышено качество транспортных услуг, но и обеспечена высокая эффективность транспортной отрасли в целом [3].

В ОАО «РЖД», в рамках обеспечения основных принципов реализации Стратегии, планируется формирование 8-ми цифровых платформ, представляющих собой системные технологические комплексы, обеспечивающие продуктивное взаимодействие между участниками транспортного рынка:

- мультимодальные пассажирские перевозки;
- мультимодальные грузоперевозки;
- управление линейной инфраструктурой;
- управление подвижным составом;
- управление процессами транспортировки;
- транспортно-логистические узлы;
- управление логистикой цифровой коммерции;
- непроизводственные процессы.

Среди цифровых технологий наиболее востребованными выступают такие, как блокчейн, «интернет вещей», системы ИИ, «большие данные», технологии дополненной реальности, беспроводной связи и т.д.

В сфере развития транспортно-логистических услуг ключевой инициативой выступает формирование автоматизированного ресурса, обеспечивающего ведение единого каталога услуг по грузоперевозкам, за счёт чего потребитель получает широкий доступ ко всему перечню предлагаемых услуг, а также к соответствующим параметрам и условиям.

В сфере развития пассажирского комплекса в перевозках дальнего следования в качестве основной инициативы можно определить процесс цифровизации бизнес-процессов и клиентских сервисов.

Все производственные отрасли в условиях 4-й индустриальной революции переходят к процессам цифровизации, что означает использование во всех отраслях экономики цифровых данных и цифровой аналитики как основного фактора производства и повышения конкурентоспособности национальных экономик.

В цифровой корпоративной культуре ключевыми направлениями выступают эффективное обучение и подготовка участвующего в процессах цифровизации персонала, а также формирование института т.н. агентов изменений, т.е. тех сотрудников, чья деятельность непосредственно связана с таким обучением, подготовкой мероприятий по управлению процессами модернизации, мониторингом хода данных процессов, обобщением и распространением позитивного практического опыта.

Наряду с корпоративной культурой, в транспортной отрасли можно выделить следующие направления, в первую очередь подлежащие цифровой трансформации:

- развитие на основе клиентоориентированности транспортно-логистических систем в рамках единого транспортного пространства;
- разработка и внедрение динамических систем управления процессами перевозок на основе использования ИИ;
- внедрение технологии «умной станции» - инновационной системы, обеспечивающей механизацию и автоматизацию станционных процессов;
- разработка и внедрение современных цифровых технологий в сферах путевой инфраструктуры, электроснабжения, ж/д автоматики, ИКТ и т.д.;
- определение нормативных требований для процессов разработки инновационного подвижного состава;
- обеспечение системы управления безопасностью движения, разработка методов и средств управления транспортными рисками;
- разработка и внедрение передовых технологий, обеспечивающих распространение скоростного и высокоскоростного движения;
- внедрение инновационных технологий в сфере перевозки тяжёлых грузов;
- повышение энергетической эффективности транспортных процессов;
- совершенствование используемых технологий и средств по охране окружающей среды;
- обеспечение развития системы менеджмента качества.

Цифровизация транспортной отрасли подразумевает необходимость совершенствования как бизнес-процессов, так и нормативно-правовой базы, регулирующей данную сферу. Текущие преобразования связаны с масштабными изменениями процессов производства, а также механизмов функционального взаимодействия структурных подразделений; это подразумевает необходимость формирования проектного офиса по реализации цифровых стратегий, создание цифровых платформ в сотрудничестве с научным комплексом отрасли, а также обязательность научного обоснования для каждого из этапов работы.

В железнодорожной отрасли один из основных элементов стратегии цифровизации – это создание цифровых платформ в сфере управления транспортными процессами. В ходе их разработки и внедрения пересматривается порядок взаимодействия

структурных подразделений и обеспечивается совершенствование бизнес-процессов. В качестве примера можно привести регламент взаимодействия между Центром фирменного транспортного обслуживания, Центральной дирекцией управления движением, а также структурными отделами данных организаций в рамках планирования и реализации процессов грузоперевозки. Новый регламент разрабатывался с учётом необходимости обеспечения максимально эффективного взаимодействия, финансовой стабильности и конкурентоспособности компании в целом, рационального использования инфраструктуры, а также выполнения бюджета по объемам перевозок и достижения плановых показателей использования подвижного состава.

Регламент предусматривает функции прогнозирования и планирования, организации договорной работы и оперативной деятельности, контроля выполнения договорных обязательств.

Процесс взаимодействия в ходе планирования грузоперевозок состоит из нескольких этапов, соответствующих прогнозированию объемов грузоперевозок на месяц, на квартал и на год. [4] Прогнозные параметры погрузки для грузоперевозок в РФ, а также транзитных грузоперевозок определяются ж/д администрациями государств СНГ на базе результатов анализа соответствующих данных статистики. Прогноз квартальных объемов грузоперевозок составляется не более, чем за месяц до начала соответствующего квартала, с целью уточнения годового плана перевозок. План перевозок составляется на основе грузовой базы, а также заявок на грузоперевозки в рамках инфраструктуры пропускных и перерабатывающих мощностей. Кроме того, план погрузки составляется на ближайшие сутки при учете таких факторов, как суточный график подачи вагонов под погрузку, возможность своевременного подвода порожнего приватного парка, а также актуальные ограничения пропускной способности участков и перерабатывающих станционных мощностей.

Целый ряд структурных подразделений задействованы в планировании грузоперевозок; при этом обобщение и анализ данных обеспечиваются такими информационными системами, как: автоматизированная система централизованной подготовки и оформления перевозочной документации; единая автоматизированная система актово-претензионной работы коммерческого хозяйства в сфере грузоперевозок; автоматизированная система оперативного управления процессами перевозок и так далее. Перечисленные ИС обеспечивают в ж/д отрасли возможность оперативного сквозного производственного планирования грузоперевозок.

Учитывая особенности глобализации, современная международная торговля связана с целым рядом сложных, динамично развивающихся процессов, охватывающих многие сферы социальной жизнедеятельности, в том числе мировую систему товародвижения, а также логистику и транспорт. В транспортно-логистической деятельности данные процессы наиболее значимы, поскольку, когда товародвижением охвачены территории различных государств, необходимо формирование целостного, единого пространства движения потоков ТМЦ, а также обеспечение оптимальных условий для обеспечения интегрированного товарно-информационного обмена. При этом ключевыми факторами, способствующими сближению субъектов товародвижения, являются: усиление в соответствующей системе роли ТНК; активное внедрение ИКТ; развитие интернет-сервисов и электронной торговли; транспортные процессы; международные сети товарных поставок. Следует отметить, что в развитии мировых экономических процессов сыграла

определённую роль также пандемия COVID-19 и связанные с ней ограничения. [2, 3] Вторжение во все сферы жизнедеятельности (в том числе в работу транспортной отрасли) цифровых ТНК, развитие монополизации капитала, а также возникновение некоторых геополитических факторов повлекли за собой мировой логистический кризис, означающий разрушение всех сформированных ранее схем доставки товаров и грузов. Одним из ключевых катализаторов преобразований, вне сомнения, является гибкость в рабочем пространстве[4]; на текущий момент при наличии цифрового устройства с выходом в интернет работа возможна в любой точке мира.

Определяющими факторами, влияющими на рост интеллектуальной мобильности выступает, во-первых, доступность цифровых технологий, во-вторых, их роль в преодолении информационных разрывов между субъектами ТЛС (транспортно-логистической системы). Именно поэтому ТЛС выступает в качестве ключевого средства преодоления нестабильности мировой экономики, что обеспечивает возможность интероперабельности, т.е. совместимости её компонентов.

За счёт функционирования интероперабельных систем обеспечивается максимально стабильное и эффективное взаимодействие, основанное на принципе мобильности логистических услуг в сфере грузоперевозок.

По мере развития цифровизации усиливается также значимость прочих системных факторов, ещё более заметно влияющих на надёжность функционирования ТЛС. В целом ряде научных работ отмечается, что переход к новому технологическому укладу неразрывно связан с установлением новых принципов, созданием новых инженерных моделей. [5, 6, 7, 8, 9, 10]

В сфере логистических технологий, обеспечивающих в условиях мобильности высокую эффективность ж/д перевозок, одна из наиболее актуальных проблем состоит в преобразованиях, основанных на использовании инновационных методов управления процессами интермодальных грузоперевозок. В ходе исследования влияния интеллектуальной мобильности и совместимости систем на ж/д транспорте научно-методическое обеспечение должно охватывать все этапы товародвижения и функционирования интермодальных ТЛС, что обусловлено системой логистики, предусмотренной положениями реализуемой в отечественной транспортной отрасли «Стратегии цифровой трансформации». [11]

Новая стратегия должна базироваться на принципах мобильной бизнес-архитектуры, предусматривающих возможность переключения каналов движения ТМЦ на протяжении всего жизненного цикла продукции, использование динамических цифровых платформ, аналитику «больших данных» и формирование гибких цепей поставок. [12]

Активное внедрение цифровых технологий в условиях современного развития НТП имеет место практически во всех экономических сферах; прежде всего, это обусловлено ознаменовавшим 4-ю индустриальную революцию созданием сетевых структур. [12] Мировые процессы цифровизации инициировали концептуальные преобразования и формирование сетевых версий ТЛС на базе процессов автоматизации и роботизации, при участии госструктур, бизнес-сектора и различных социальных групп. [13]

Согласно результатам современных исследований процессов цифровизации и мнению целого ряда экспертов, наиболее важная проблема современного бизнеса (как в теории, так и на практике) состоит в обеспечении жизнеспособности не только отдельных звеньев, но и всей системы грузоперевозок. Процессы взаимодействия в рамках данной системы, методы

идентификации продукции и т.д. осуществляются на качественно новом уровне за счёт применения таких цифровых технологий, как big data, промышленный «интернет вещей», ИИ, машинное обучение и пр. [12]

Благодаря организационно-экономическому потенциалу цифровых технологий они широко используются в логистической сфере, в том числе в железнодорожной отрасли. На основе моделирования жизненного цикла ЦП, а также цифровизации риск-менеджмента может быть разработана ТЛС нового поколения, функционирующая на основе риск-ориентированных подходов. [12, 14]

На различных этапах функционирования ТЛС товародвижение обуславливает образование «стыков» между различными субъектами системы. При этом использование интегрированного подхода к цифровым логистическим процессам за счёт совмещения указанных субъектов обеспечивает мобильность процессов. Данный подход может применяться как в целях мониторинга рисков, так и для прогнозирования функционирования системы в целом. Согласование технологических и логистических процессов обеспечивается за счёт использования цифровых модулей жизненного цикла в совокупности с параметрами мониторинга рисков. На основе использования средств интеллектуальной мобильности обеспечивается, вместе с тем, максимально точная оценка будущего состояния системы, возможность выявления актуальных тенденций и определения наиболее вероятных дальнейших изменений. За счёт этого формируется структура big data, способствующая мобильному подключению сложных технологических систем (например, «интернета вещей»). [12]

Эффективным средством обеспечения прозрачности ИКТ, как уже отмечалось, выступает применение архитектурного подхода и принципов открытых систем. Актуальной проблемой, наряду с разработкой и внедрением технологии открытых систем, является изучение процессов формирования технических эталонных моделей [15], где внимание акцентируется на обеспечении интероперабельности различных систем.

В данной сфере ключевыми направлениями являются [15]:

- общетеоретические основы интероперабельности;
- разработка эталонной модели интероперабельности;
- формулировка основных принципов и критериев оценки интероперабельности;
- оформление научно-технических документов.

Интероперабельность, в соответствии с общепринятым определением, представляет собой способность 2-х (и более) компонентов (ИС) к использованию данных и информационному обмену. Значительную роль интероперабельность играет в ходе разработки и интеграции систем промышленной автоматизации. Помимо масштабирования и переносимости, интероперабельность входит в перечень ключевых характеристик открытых систем.

Всё более пристальное внимание на текущий момент уделяется проблемам обеспечения интероперабельности, обеспечивающей на всех уровнях взаимодействие между ИС и объектами бизнес-архитектуры. Интероперабельность применительно к ТЛС требуется на уровне как технологий, так и бизнес-процессов, в отношении которых это подразумевает наличие у предприятия способности взаимодействовать со своими деловыми партнерами, а также формировать и развивать в условиях цифровизации направленные на извлечение максимальной прибыли деловые отношения. Интероперабельность, таким образом, рассматривается как связующее звено между бизнес-процессами и IT-функционалом.

Масштабное использование экономическими субъектами ИКТ привело к возникновению таких терминов, как E-enterprise («электронное предприятие») и Enterprise Interoperability («интероперабельность предприятия»). Последний термин обозначает взаимодействие между ИС в рамках предприятия, а также с ИС включённых в логистическую цепочку (и, соответственно, в цифровую систему) предприятий-партнеров.

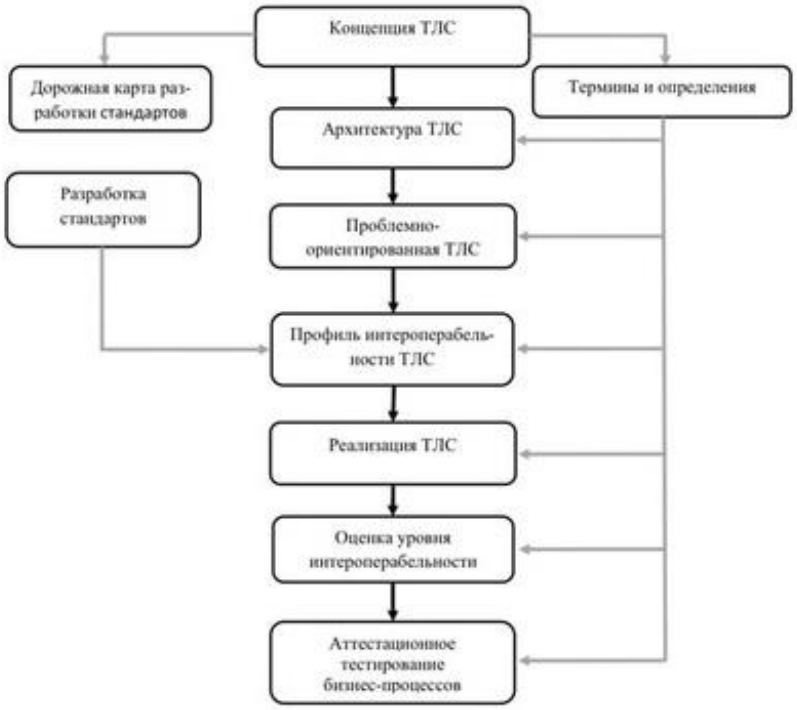

Рисунок 1. Модель интероперабельности ТЛС

При применении комплексного подхода формируется новая технологическая среда взаимодействия между различными этапами жизненного цикла продукции и логистическими процессами, способствующая снижению соответствующих рисков. [1]
В настоящее время объемы транспортируемых грузов в России значительно повышаются. В связи с этим возникает необходимость создания гибкого и оперативного механизма взаимодействия между участниками процесса транспортировки. Для решения данной задачи необходимо внедрение и использование цифровых программ в данной сфере, а также переход на стратегию интеллектуальной мобильности ТЛС [1]. При этом особое значение необходимо уделять мультимодальным системам [1]. В сфере транспортировки грузов наибольшее распространение получили интернет вещей и бизнес-архитектура ТЛС [13]. Архитектура предприятия описывает структуру предприятия и процессы (как текущие, так и планируемые). Таким образом, использование данной системы охватывает все процессы организации и позволяет обеспечить взаимодействие бизнес-модели и ИТ-системы. Таким образом, бизнес-архитектура ТЛС позволяет обеспечить «бесшовность» и интеграционное взаимодействие всех звеньев (ЦП). Все это позволяет создать открытые и бесперебойные интермодальные инструменты в работе транспортной системы. В том

числе, данная архитектура применима и в организации транспортировок железнодорожным транспортом [1].

Обсуждение результатов. В современных условиях для обеспечения эффективности и оперативности процессов необходимо применять комплексный подход. Большие возможности для реализации данной задачи открываются за счет использования цифровых технологий. Стандартные бизнес-процессы в интермодальные ТЛС позволяют значительно упростить, ускорить и перевести в автоматизированный режим многие операции. В частности, за счет информационных технологий возможно оптимизировать алгоритмы обслуживания грузовладельцев [1].

Совершенствование эффективной транспортной и логистической инфраструктуры остается важной стратегической задачей как для нашей страны, так и для международных рынков [1].

Интеллектуально-мобильные ТЛС предусматривают использование расширенной аналитической системы, а также возможность оперативного подключения для создания интеграционного взаимодействия участников.

При формировании стратегии интеллектуальной мобильности особое внимание следует уделять следующим принципам [1]:

- связанность. Данный принцип позволяет обеспечить оперативное взаимодействие между всеми звеньями системы, а также информационную прозрачность;
- интеллектуализация. Обеспечение процесса интеграции всех существующих в системе элементов;
- автоматизация бизнес-процессов [1].

На рисунке 2 представлена структура LIM-модели.

Новый подход к стратегии интеллектуальной мобильности в ТЛС предполагает реализацию взаимодействия интеллектуальных и интернет-технологий при помощи комбинаторики процессов и ресурсов [1].

Соглашение о взаимодействии	Выравнивание основных данных	Условия логистического обслуживания	Планирование	Складирование	Транспорт	Финансовые расчеты

Рисунок 2. Расширенная структура LIM-модели

В начале 2021 г. в рамках проекта «Мобильность мультимодальных поставок в торгово-экономическом сотрудничестве России-Германии» был проведен круглый стол [12]. В ходе данного мероприятия было предложено решение по созданию системы взаимодействия между транспортно-логистическими системами двух стран на базе инфраструктуры ж/д транспорта.

Также было отмечено, что данное решение служит эффективным инструментом усиления конкурентных позиций компаний России и Германии, а также расширения и укрепления торгово-экономического сотрудничества [12].

В качестве эффективного инструмента для обеспечения мобильности могут быть использованы технологические карты процессов, ключевые критические точки. В карте

рисков должен быть предусмотрен не только уровень отдельного события или участника, но также и предполагаться разработка комплексной программы по анализу рисков [2].
Переход на принципы интероперабельности с использованием системы ТЛС позволит значительно улучшить всю систему транспортировки грузов, объединить ее в целостную систему и реализовать все операции в режиме реального времени. Использование интегрированных инструментов позволит обеспечить мобильность процессов, а также повысить доступность интермодальных систем доставки. Кроме того, у грузовладельцев появится возможность улучшить свои сервисные возможности.

Вывод

Таким образом, можно сделать вывод, что интегрированный подход является высокоэффективным механизмом трансформации [2]. Развитие мобильных устройств связи позволяет решить многие стратегические задачи по обеспечению бесперебойной, оперативной и бесшовной грузовой логистики. Все это позволяет создать открытые и бесперебойные интермодальные инструменты в работе транспортной системы.

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QAN YADDAŞI – QƏM YADDAŞI "20 YANVAR"

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ABSTRACT

The article covers information about the sons and daughters of the Motherland, who shielded their chests against tanks and armored personnel carriers for the Motherland and its indivisibility, the martyrs of 1990, and their struggle and perseverance for the defence of the Motherland. It is noted that the children of the Motherland, who took possession of their homeland, died saying the slogans "We will not lose Karabakh", "We will die but will not give our land to anyone". The article is devoted to the analysis of two important events in the history of Azerbaijan in the most recent period - the event of January 20, 1990 and the battles for the lands of the Motherland in 2020. Here, comparisons are made between the tragedy that occurred at the beginning of Azerbaijan's independence and the victory achieved by the national army of the young Republic that has already gained independence.
Keywords: Homeland, Karabakh, indivisibility, January 20, history, martyrs, people, freedom

Xülasə
Məqalədə Vətən üçün, onun bölünməzliyi üçün sinəsini tank və BTR-lərə sipər edən Vətən oğulları, qızları, 1990-cı il şəhidləri və onların Vətənin müdafiəsi uğrunda göstərdikləri mübarizə ,əzmkarlıq haqqında məlumat verilir. Yurduna, elinə sahib çıxan Vətən övladlarının "Qarabağı əldən vermərik", "Ölərik bu yoldan dönmərik" şüarları ilə son nəfəslərini verdikləri qeyd olunur. Məqalə ən yeni dövr Azərbaycan tarixində iki əhəmiyyətli hadisənin - 1990-cı il 20 Yanvar hadisəsinin və 2020-cı il Vətən torpaqlari uğrunda gedən döyüşlərin təhlilinə həsr edilib. Burada Azərbaycanın müstəqilliyinin əvvəlində baş vermiş faciə və artıq müstəqillik qazanmış gənc Respublikanın milli ordusunun cəbhədə əldə etdiyi qələbə arasında müqayisələr aparılır.
Açar sözlər: Vətən,Qarabağ, bölünməzlik, 20 Yanvar,tarix,şəhidlər,xalq,azadlıq

Azadlığa gedən yolun zirvəsi – 1990-cı il ....
İllər ötür, nəsillər dəyişir,xalqın həyatında baş verən hadisələr tarixə çevrilir. Bəziləri unudulub gedir, bəziləri qan yaddaşına həmişəlik həkk olunur.
Azərbaycanın müasir tarixini vərəqləyənlər 20 Yanvar səhifəsinə çatanda mütləq dayanırlar. Bu gün milyonların yaddaşında özünəməxsus yer tutr. Onu obrazlı şəkildə " Azərbaycan tarixinin qanlı və şanlı səhifəsi" adlandırırlar.
1990- cı ilin 20 Yanvarından bizi 33 il ayırır. Bütün yaraları sağaltmağa qadir zaman xalqınn 20 Yanvar ağrısına məlhəm ola bilmr. Axı necə sağalsın, necə qaysaqlansın?... 1990-cı il yanvarın 19-dan 20-nə keçən gecə atılan güllələrin vıyıltısı, şəhərə soxulan tankların motorlarının uğultusu, hələ də qulaqlardan getməyib.
Çəkdilər qəlbimizə dağ,
İyirmi yanvar gecəsi,
Al-qana boyandı torpaq
İyirmi yanvar gecəsi

İllər ötdükcə sağalmır ki,
Dərinləşir yaralar.
Lap yüz il keçsə belə,
Unudulmaz həmin zamanlar

Bəli, Vətənimin sinəsinə çəkilən dağdı o gün. Vətən sevgisi... Ən müqəddəs duyğudur bu duyğu. Vətən arzuların qanad açıb uçduğu məkandır. Vətən şərəfdir, namusdur, könül dünyasında yüksələn inamdır, minillik kök salan xalqdır, anadır, onun timsalında candır. Vətən ulu əcdadların ruhu, babaların məzar yeridir. Vətən varlığını bizdən əsirgəməyən, bizi köksündə bəsləyən, əbədi olaraq sahib çıxan sahibimizdir. Unutmayaq ki, Vətən vətəndaşların birləşmə nöqtəsidir. Vətən yeganə məkandır ki, insan orada özünü kölə yox, onun əsl sahibi hiss edir. Məhz Vətən üçün ölüb, əbədi yaşamağa dəyər.
Ermənistanın Dağlıq Qarabağı öz büdcəsinə daxil etməsi və Moskvanın buna səssiz qalması isə bardağı daşırdan son damlası oldu. Baş verənlərin məkrli bir plan olduğu gün kimi aydın idi. 1990-cı ilin yanvarında ölkəmizə qarşı bu cür ərazi iddiaları irəli sürən Ermənistanın təcavüzkar qüvvələrindən və keçmiş SSRİ-in onlara havadarlığından hiddətlənən, buna dözə bilməyən xalq Bakının küçələrinə və meydanlarına axışdı. Öz haqlı etirazını bildirən dinc, əliyalın əhaliyə qarşı dəhşətli bir qərar verildi. Sovet ordusunun döyüş hissələrinin yeridilməsi Azərbaycanda misli görülməmiş faciəyəgətirib çıxartdı.
Vətən üçün, onun bölünməzliyi üçün sinəsini tank və BTR-lərə sipər edən Vətən oğulları, qızları, 1990-cı il şəhidləri tarix qarşısında bir daha sübut etdilər ki, Vətən bölünməzdir. Yurduna, elinə sahib çıxan Vətən övladları "Qarabağı əldən vermərik", "Ölərik bu yoldan dönmərik" şüarları ilə son nəfəslərini verdilər.

Ərşə ucalmışdı ana fəryadı
Hər yan dəhşər idi, hər yan ah-fəğan
Bir namus sözüydü şəhidlik adı
Oğullar vətənçün keçirdi candan.

Xalq övladlarını son mənzilə yola salır. Bakının ən uca yerində şəhidlik qərar tutur.
Heç güllərin ağladığını görmüsünüz?...
Qərənfilləri matəm çiçəyinə çevirən məşum gün şəhid qanından al-qana bələndi , gözlərindən damla-damla yaş axıtdı qərənfillər. Qərənfil yağışı yağdı o gün Bakımıza. Bax onda ağladı güllər, o gün ağladı qərənfillər. Və bir də heç zaman sevinmədi, sevindirə bilmədi aşiqləri. Nəsibi acı göz yaşları ilə aşiqlərin məzar daşlarını bəzəmək oldu.

Bəxti asılan qıza,
Hünəri aslan qıza,
Toyu yas olan qıza,
Ağla, qərənfil ağla.

Şəhidlər xiyabanı... Arzuların ürəyində kaş olan, gülüşləri gözlərində yaş olan, əbədi bir daş olan Vətən fədailəri. Bugünkü günümüzün Leyli sevgisini, Leyli sədaqətini, Leyli ucalığını görmək istəyən "Şəhidlər" xiyabanına üz tutur. Bir qoşa məhəbbətin, qoşa zirvəsin görmək üçün. Şəhidlərin ruhuna əbədi rahatlığı vermək üçün. Qanınız yerdə qalmadı. Gözəl Qarabağımız-

uğrunda can verdiyiniz torpaqlar bu gün öz sahibinə qayıtdı. Sizin gücünüzdən güc alan Azərbaycanım əbədi və əzəli torpaqlarına sahib çıxdı. Azərbaycan Respublikasının suverenliyi və ərazi bütövlüyü uğrunda gedən mübarizədə qəhrəmanlıq göstərən əsgər və zabitlərimiz, arxa cəbhədə çalışan mülki insanlarımız, bütövlükdə xalqımız əzm və iradə, bir yumruq kimi birlik və həmrəylik nümayiş etdirdi. İndi sizin dalğalandırdığınız ulu bayraq Qarabağda- Şuşada, Laçında dalğalanır. Vətən göylərini özünə məskən edir.

Bu gün hüzn günü, qəm günü deyil,
Fəxarət günüdür, qürur günüdür.
Xalqın varlığını təsdiq eyləyən,
Şərafət günüdür, möhür günüdür.

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MEMORY OF BLOOD – MEMORY OF GRİEF "20TH JANUARY"

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ABSTRACT

The article covers information about the sons and daughters of the Motherland, who shielded their chests against tanks and armored personnel carriers for the Motherland and its indivisibility, the martyrs of 1990, and their struggle and perseverance for the defence of the Motherland. It is noted that the children of the Motherland, who took possession of their homeland, died saying the slogans "We will not lose Karabakh", "We will die but will not give our land to anyone". The article is devoted to the analysis of two important events in the history of Azerbaijan in the most recent period - the event of January 20, 1990 and the battles for the lands of the Motherland in 2020. Here, comparisons are made between the tragedy that occurred at the beginning of Azerbaijan's independence and the victory achieved by the national army of the young Republic that has already gained independence.

Keywords: Homeland, Karabakh, indivisibility, January 20, history, martyrs, people, freedom

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THE KEY ISSUES PROSPECTS, PROGNOSIS, ACHIEVEMENTS, PERCEPTION, CHALLENGES AND ASPIRATIONS OF ARTIFICIAL INTELLECT SERVICES IN MEDICINE, PHARMACEUTICS AND PUBLIC HEALTH

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ABSTRACT

The aim of the study was to examine and analyze the prospects for the use of artificial intelligence in pharmacy, medicine and health services. Digital health has been around for a long time with technologies focused on e-health (electronic health records), the rapid growth of technology in recent years has led to exciting new areas of digital health, including mobile health applications. and wearable technologies. Telehealth and telemedicine, artificial intelligence, advanced robotics and genomics. Digital health also includes other digital health uses such as the Internet of Things, advanced computing, and big data analytics. While they can provide significant benefits, there are also risks, especially in terms of health disparities, data privacy, and the limitations of artificial intelligence. Digital health is a broad term and its definition will change as new medical technologies emerge.

While digital health has been around for a long time with technologies focused on e-health (electronic health records), the rapid growth of technology in recent years has led to exciting new areas of digital health, including mobile health applications. and wearable technologies. Telehealth and telemedicine, artificial intelligence, advanced robotics and genomics. Digital health also includes other digital health uses such as the internet of things, advanced computing, and big data analytics. While they can provide significant benefits, there are also risks, especially in terms of health disparities, data privacy, and the limitations of artificial intelligence. Digital health is a broad term and its definition will change as new medical technologies emerge.

Digital health is largely shaped by experts outside the health sector and offers the opportunity for cross-disciplinary collaboration to lay the foundation for digital health education. Pharmacy and pharma-scientist education must be needs-based in order to meet the current and ever-changing demands of digital health. These requirements should reflect the needs of all members of all industries and career levels in pharmacy and pharmaceutical sciences, from clinical pharmacists to drug discovery. digital medicine. Currently, the digital medical system contains four main components: an inert sensor embedded in an inert tablet, a patient-worn non-drug (patch) sensor, a mobile application, and a web-based control panel. Upon interaction with gastric juice, the recorded sensor is activated and connected to a wearable sensor which sends a signal to a mobile device where it can be viewed by patients or later by healthcare professionals and caregivers via secure mobile and cloud applications. The vast amount of medical data enables more use of

artificial intelligence and machine learning in pharmaceutical practices to solve important questions related to drug management and administration. Analyzing trends in large data sets can reveal individual risks of adverse events, behavioural issues, compliance patterns, and more. A pharmacist is a professional expert who can complement the expertise of a data scientist to create services. Understanding the terminology and concepts used in artificial intelligence will help pharmacists interact with data scientists and collaborate constructively to develop models that improve patient care. Digital health systems can also empower and engage patients, making them co-creators of care. Shared decision-making between healthcare professionals and patients requires trust, partnership and transparency in mutual relationships. Healthcare professionals become companions in the patient's journey to health, while demonstrating empathy and humanity to support the patient well-being.

Software based on BR. It can also record other behavioural and physiological parameters such as physical activity, heart rate, skin temperature, sleep, and digital therapy. Aspiring pharmacists, pharmaceutical scientists and healthcare professionals. Students are getting more and more involved in the era of digital transformation. Their participation in digital health education processes is an important opportunity as they support the adoption and promotion of these digital health technologies. Several studies have been conducted to understand the digital health skills, knowledge, and competencies of pharmacy students. With much of the research being conducted in countries like the US, UK, and Australia, the global state of digital health in pharmacy schools is not fully understood.

Keywords: Perspectives, artificial intellect, service, pharmacy, medicine, public health.

Introduction

The term "telemedicine" was introduced in the 1960s and has extended to all forms of communications technology to provide public health care and education in rural and remote areas, as well as to train students in telepharmacy. The International Federation of Pharmacists defines telemedicine as “the use of information and. Communications Technology (ICT) Delivery Telepharmacy is a relatively recent development in the healthcare sector, enabling the delivery of quality pharmaceutical services in rural and remote areas. It drew a lot of attention during the COVID-19 pandemic. Digital health technologies save lives, improve health and well-being, expand access to health care and help build effective health systems and healthy populations. As healthcare challenges increase and the population ages, digital health may be key to addressing many unmet healthcare and service needs [1-3].

Digital health is a key priority for public policies and health organizations involved in implementing digital health and improving digital literacy standards. The World Economic Forum pointed out that “few sectors have the potential for such profound digital transformation as healthcare [4-5].

Recent technological advances have revolutionized clinical practice from disease prevention to diagnosis, monitoring and treatment, generating unprecedented public interest and commitment to self-care and health [6-7].

The COVID-19 pandemic has accelerated digital health. Industries like healthcare have the potential to be profoundly transformed by digital technologies. Recent technological advances have revolutionized clinical practice from disease prevention to diagnosis, monitoring and treatment, generating unprecedented public interest and commitment to self-care and health. The COVID-19 pandemic has accelerated the transformation of digital healthcare, which will impact

healthcare services in the long term. Important lessons can be learned from this digital transformation of healthcare [8-10].

Many digital health technologies are highly dependent on healthcare professionals understanding and using them appropriately. There is a clear need for increased attention, concerted action and investment in education, training and skills development to ensure healthcare professionals understand and use digital health to achieve the intended benefits. Universities and educational institutions offer digital medical education, with most programs focusing on certification models. There is a lack of digital medical education and training, and a nationally or professionally oriented initiative could be an impetus for inclusion in education [11-12].

The profession of pharmacist is historically linked to information technologies. Therefore, he has the ideal skills and abilities to offer patients more digital health services. Realizing the full potential of digital health requires a pharmaceutical workforce that is confident, capable, agile and digitally savvy. Pharmaceutical staff can only keep pace with the digital transformation of the healthcare system with better training and further education [13-14].

Digital health is largely shaped by experts outside the health sector, providing opportunities for interdisciplinary collaboration to develop the foundations of digital medical education. Education in pharmacy and pharmaceutical sciences must be needs-based to meet the current and changing demands of digital health. These requirements should reflect the needs of all members in all sectors and career levels of pharmacy and pharmaceutical science, from clinical pharmacist to drug discovery [15-16].

Aspiring pharmacists, pharmaceutical researchers and healthcare professionals. Students are most involved in the era of digital transformation. Their participation in digital health education processes is an important opportunity as they support the adoption and promotion of these digital health technologies. Several studies have been conducted to understand the knowledge, skills, and competencies of pharmacy students in digital health. Since most research is conducted in countries such as the US, UK and Australia, the global state of digital health in pharmacy schools is not fully understood [17-18].

Aim of the research was to study and analyze the perspectives of artificial intellect in service of pharmacy, medicine and public health.

Methodology

The main question of this article was to research and analyses the perspectives of artificial intellect in service of pharmacy, medicine and public health. We have searched and analyzed PubMed, Web of Sciences, Clinical key, Tomson Routers and Google Scholar mostly, using search terms bases, including the words to research and analyses the perspectives of artificial intellect in service of pharmacy, medicine and public health. Then, each article was discussed and an abstract of the total information gathered during the process was provided, aiming at easy understanding of the public. To establish these outcomes, over two hundred articles were investigated. We brought together all published data to comprehensively examine the effects in a systematic review, to define the roll out of the study of the research and analyses of the perspectives of artificial intellect in service of pharmacy, medicine and public health.

Results and discussion

Many pharmacy schools and faculties do not offer digital medical education. Similarly, only a small proportion of the students and professionals surveyed received digital health education or

training as part of their continuing education. Interviewed students and teachers mistakenly believe that digital medical education and e-learning are considered interchangeable terms. Digital medical education has a long way to go to create a ready and flexible pharmacy education that can cope with the rapid changes in digital healthcare. Integrating digital health into a higher pharmaceutical education program is an important strategy for improving digital health. “Much remains to be done to make pharmaceutical education ready and flexible to keep up with the rapid changes in digital healthcare. About half of the teachers agreed that their students have the skills to deliver digital health services and that their individual schools can easily identify and add new digital health literacy skills to the curriculum as they become available in practice. Although this discovery shows the potential for overall progress Because it can promote health awareness and lifelong learning, pharmacists are more likely to receive digital health education through continuing professional development if they have already taken a digital health course in school. The most common digital health education reported by schools and colleges was a lack of previous experience, followed by a lack of resources n[19-20].

The answers of the specialists showed that they are not familiar with new digital health technologies such as blockchain technology, bots, digital medicine and artificial intelligence. One of the biggest gaps in digital medical education is the skills and knowledge to use technology to solve existing clinical problems and improve care. Practitioner expectations for the clinical benefits of digital health in practice have remained low. This may be due to the fact that, from the point of view of the scientist, the introduction of digital health tools into clinical care was one of the concepts that were least often included in pharmaceutical education. Existing digital health courses seem to be more focused on teaching administrative and functional skills to facilitate business processes and improve operational efficiency [21-22].

Pharmacists, pharmaceutical schools, educators, students and professionals have indicated that they should support national organizations, schools, workplaces and student associations in providing advice, training, infrastructure and educational resources for digital health.

Training in the implementation of digital health tools was a key need cited by students and professionals alike. The lack of supportive policies, the availability of digital health tools and data, and technical limitations have been identified as the biggest challenges in implementing digital health in practice.

This report is the first of its kind global study of digital health in pharmaceutical education that examines the readiness and responsiveness of pharmaceutical education and identifies gaps in knowledge and skills among pharmacist professionals. We believe this report will encourage further research and development in this area to expand digital health among the pharmaceutical workforce [23-24].

Digital health is a top priority for political and health organizations involved in implementing digital health and raising digital literacy standards. Recent advances in technology have revolutionized clinical practice, from prevention to diagnosis, monitoring and treatment of disease, and have led to unprecedented public interest and participation in self-care and health [25-26].

The COVID-19 pandemic has accelerated the digital transformation of healthcare, with a lasting impact on healthcare. There are important lessons to be learned from this digital healthcare transformation. New digital health technologies must be people-centred, of high quality, evidence-based and effective, work for both providers and consumers, be sustainable, inclusive, fair and reliable so that they can be integrated into practice [27].

Many digital health technologies rely heavily on their use and proper use by healthcare professionals. It has become necessary for healthcare professionals to equip themselves with digital health literacy in order to deliver new and evolving models of healthcare services.
Pharmacy traditionally uses information technology. As such, he has the ideal skills and competencies to deliver more digital healthcare services to patients.
According to the World Health Organization (WHO), digital health is "a field of knowledge and practice related to the development and use of digital technologies to improve health." Technology and digital transformation are rapidly changing information ecosystems and the design of healthcare systems. The use of various digital technologies, such as artificial intelligence and machine learning, offers enormous opportunities to improve healthcare services, access to healthcare, healthcare workforce and health outcomes.
While digital health has been around for a long time with technologies focused on e-health (electronic health records), the rapid growth of technology in recent years has led to exciting new areas of digital health, including mobile health applications (mHealth). and wearable technologies. Telehealth and telemedicine, artificial intelligence, advanced robotics and genomics. Digital health also includes other digital health uses such as the Internet of Things, advanced computing, and big data analytics. While they can provide significant benefits, there are also risks, especially in terms of health disparities, data privacy, and the limitations of artificial intelligence. Digital health is a broad term and its definition will change as new medical technologies emerge [28-29].
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An electronic medical record (EMR) is a digital version of a paper patient record. Electronic health records are real-time patient records that make information easily and securely accessible to authorized users. While the EHR contains patient and patient records, the EHR system is designed to go beyond standard clinical data collected in a healthcare provider's office and can include a broader view of patient care. patients. Electronic health records can: contain a patient's medical history, diagnoses, medications, treatment plans, vaccination dates, allergies, x-ray images, and lab and test results; provide access to evidence-based tools that healthcare providers can use to make decisions about patient care; as well as supplier workflow automation and optimization [32-33].
An electronic medical record (EMR) is a digital version of a paper patient record. Electronic health records are real-time, patient-accessible records that make information easily and securely accessible to authorized users. While EHRs contain patient and patient records, the EHR system is designed to go beyond standard clinical data collected in a healthcare provider's office and can provide a broader view of patient care. patients.
An EHR can: contain a patient's medical history, diagnoses, medications, treatment plans, vaccination dates, allergies, x-ray images, and lab and test results; Provide access to evidence-

based tools that healthcare providers can use to make decisions about patient care. as well as automating and optimizing supplier workflow [34-35].

One of the key features of the EHR is that health information can be created and managed by authorized healthcare providers in a digital format that can be shared with other healthcare providers across multiple healthcare organizations. health. EHRs are designed to share information with other health care providers and organizations such as laboratories, specialists, medical imaging centers, pharmacies, emergency rooms, and school and occupational clinics, in order to that they contain information from all clinicians involved in patient care [36-37] .].

One of the key features of HR is that health information can be created and managed by authorized healthcare providers in a digital format that can be shared with other healthcare providers across multiple healthcare organizations. health. EHRs are designed to share information with other healthcare providers and organizations such as laboratories, specialists, medical imaging facilities, pharmacies, urgent care facilities, and schools and clinics in workplace, so that they include information from all physicians involved in patient care [38–38]. 39].

Pharmacists provide patient care across the continuum of care and must actively participate in the electronic health record, researching and documenting information. The use and implementation of the EHR is driven by funding and policy changes, and pharmacists should be part of development and implementation teams. As medical information technology develops rapidly and EHRs are developed and deployed in healthcare environments, meeting the workflows and information needs of pharmacists in EHRs is essential to optimize quality of drug therapy and patient outcomes. Although pharmacists use many different advanced functions in the EHR, three main applications are described in the literature: documentation, medication matching, patient assessment and follow-up [40-41].

Pharmacists provide ongoing medical care to patients and must actively participate in electronic health records, information retrieval, and documentation. The use and implementation of the EHR is driven by changes in funding and policy, and pharmacists need to be part of development and implementation teams. As health information technologies proliferate and online medical records are developed and implemented in the healthcare environment, it is essential that pharmacists' workflows and information needs are met in online medical records to optimize the quality of care. medication and patient outcomes. Although pharmacists use many different advanced features of electronic health records, three main areas of application are described in the literature: documentation, medication matching, and patient assessment and follow-up [42-43].

Electronic Prescribing and Electronic Delivery Electronic prescribing is the ability for a prescriber to electronically send an accurate, error-free, and understandable prescription directly to a pharmacy from the point of care. It is an important element in improving the quality of patient care. Electronic dispensing is defined as the electronic retrieval of a prescription and delivery of the drug to the patient as specified in the associated electronic prescription. Once the medication is delivered, the dispenser reports information about the dispensed medication(s) via software. The benefits of both technologies include increased patient safety, reduced medication costs, better access to patient prescription records, and improved pharmacy workflow [44-45].

Electronic Prescribing and Electronic Delivery is the ability for a prescriber to electronically submit an accurate, error-free, and understandable prescription directly from the local pharmacy. This is an important element in improving the quality of patient care. Electronic dispensing means receiving a prescription electronically and dispensing a drug to a patient as specified in the

associated electronic prescription. Once a drug is dispensed, the dispenser provides the program with information about the dispensed drugs. The benefits of both technologies include increased patient safety, reduced drug costs, better access to patient prescription records, and increased pharmacy efficiency.

A blockchain is a growing list of records, called blocks, linked together and protected by cryptography. A blockchain can serve as a "public and distributed ledger" or "common ledger" that can record transactions between multiple parties in an efficient, verifiable, and permanent manner. Once blockchain enters the pharmaceutical environment, various activities of pharmacists can be further automated, such as managing patient records, distributing patient information, and managing reimbursements [46-47].

A blockchain is an ever-expanding list of records, called blocks, linked to each other and protected by cryptography. A blockchain can be an “open and distributed ledger” or a “shared ledger” that can record transactions between multiple parties in an efficient, verifiable, and permanent manner. As blockchain enters the pharmaceutical realm, various activities of pharmacists can be further automated, such as patient record management, patient information dissemination, and reimbursement management.

An online pharmacy is an online store that sells medicines and can function as independent internet sites, "AGUs", which are associations between pharmacies. From a consumer perspective, online pharmacies seem to offer a lot of potential value, but not necessarily in price. For patients at home, the possibility of ordering and delivering drugs at home is obvious. For those who live in remote areas and for consumers who have little time and energy to go to the pharmacy, ordering online has clear advantages. There are also people who seek personal products and prefer anonymity [48-49].

Wearable medical device refers to technology that the user can properly place on the body and control important aspects of health according to today's standards. These devices can collect data through non-invasive monitoring of physiological parameters or detection of the substrate of body parts in a minimally invasive manner. These technologies may pave the way for pharmacists to monitor drugs to improve clinical outcomes and patient safety [50-51].

A bot (also known as a web bot or internet bot) is a software application that uses steps or scripts to automate a task. Chatbots use natural language recognition (NLU) services through the many toolsets available. At NLU, chatbots focus on using a conversational interface, allowing the user to interact in a natural way. After adding clinical discovery and medical content to the bot structure, the resulting virtual personal health assistants can interact with the user on topics related to well-being, perceived health, questions about diseases, and information about medical interventions. Bots can help optimize adherence by answering medication-related questions, informing the patient about what to expect during the first few weeks of medication, or reducing the likelihood that a medication will not be taken as prescribed [52–53].

A bot (also known as a web bot or internet bot) is software that uses steps or scripts to automate a task. With the various tools available, chatbots use natural language recognition (NLU) services. NLU-enabled chatbots focus on using a conversational interface that allows the user to interact using a natural form of conversation. . , intended health, disease problems and care measures. Bots can help optimize adherence by answering medication-related questions, telling patients what to expect during the first few weeks of medication, or reducing the chance of taking another medication than prescribed [54-55].

Digital medicine. Currently, the digital drug system contains four main components: an inert sensor embedded in an inert tablet, a non-drug sensor (patch) worn by the patient, a mobile application (app); and web control panel. When interacting with gastric fluid, the swallowed sensor is activated and connected to a wearable sensor, which sends a signal to a mobile device where it can be viewed by patients or later by healthcare professionals and caregivers via mobile apps and in the secure cloud. . software-based.20 It also has the ability to record other physiological and behavioral parameters such as physical activity, heart rate, skin temperature, sleep and digital therapy [56-57].

Digital therapy (DTx) is a new treatment modality that uses digital systems such as smartphone applications, digital sensors, wearable devices, certain virtual reality or artificial intelligence devices as prescribed therapeutic interventions approved by authorities for prevention, treatment management or medical therapy. requirements. DTx products have a number of different potential roles, including modifying drug use, changing patient behavior independent of drug use, and treating a disease or influencing a patient's underlying physiological response. Many also have the option [58].

Remote Patient Monitoring (RPM) uses digital technology to collect health data from people in one location, such as a patient's home, and electronically relay the information to healthcare providers in other locations for evaluation and recommendations. Local pharmacy services have traditionally been product-related, but pharmacists have skills in medication management, disease assessment, and patient counseling that can contribute to an RPM improvement program [59].

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Online/remote (patient) counseling and telemedicine/telehealth/virtual care: Telepharmacy has many recognizable benefits, such as easy access to health services in disadvantaged, remote and rural areas, economic benefits, patient satisfaction due to effective patient education. and minimal shortage of local pharmacists and pharmacy services.

Online/Remote (Patient) Consultation and Telemedicine/Telemedicine/Virtual Care: Telepharmacy has many distinctive advantages, such as easy access to healthcare services in disadvantaged, remote and rural areas, economic benefits, patient satisfaction through effective patient guidance and minimal shortage of local pharmacists. and pharmaceutical services [60].

Artificial intelligence (AI) is an area of computer science that aims to emulate human intelligence through computer systems. This mimicry is achieved through iterative tuning of complex patterns, usually at a speed and scale beyond human capabilities. AI has the potential to have a profound impact and shift our focus from providing medicines to providing a wider range of patient care services. Improved budgeting, lower transaction costs and greater overall organizational efficiency will be seen as positive outcomes of AI data analytics.AI aims to revolutionize pharmaceutical care by connecting different pharmaceutical datasets, data platforms, medical and analyze pharmaceutical records, develop holistic treatment plans o Report adverse events or non-compliance with treatment regimen. In addition, AI can help automate repetitive pharmacy tasks, such as checking prescriptions or reviewing profiles of polypharmaceuticals (e.g. signaling overconsumption or interactions) [61].

Artificial intelligence (AI) is a branch of computer science that aims to mimic human intelligence using computer systems. This mimicry is accomplished by combining complex, repetitive patterns, often at a speed and scale beyond human capabilities. AI can have a powerful impact, shifting our focus from delivering medicines to providing a broader range of patient care services. Improved budget, reduced operating costs and improved organizational efficiency are seen as positive outcomes of AI data analysis. or report adverse events or non-compliance. In addition, AI can help automate repetitive tasks in the pharmacy, such as B. checking prescriptions or displaying polypharmacy drug profiles (alert eg overdose) [62].

Big data can be defined as digital data generated in large amounts and with great variety, accumulating at high speed and resulting in very large data sets for traditional data processing systems.31 Scientific data can be defined as a set of principles fundamentals, driving the fundamental extraction of information and insights from data.32 The pharmaceutical side of healthcare is saturated with data. Healthcare providers and pharmacy workers regularly collect and share vast amounts of information from patients to ensure they receive the care they need. While this data has traditionally only been used to ensure the right prescription is given to the right patient at the right dose, key stakeholders recognize that the information can also be used to improve several other important areas of pharmaceutical practice. The use of data is particularly impacting pharmaceutical practice in managing health plan expenditures, monitoring consumer prescription drug use, and directing research and development efforts [63].

Mobile apps can help people manage their own health and well-being, promote healthy living and provide access to useful information when and where they need it. These tools are adopted almost as quickly as they can be developed. Mobile apps allow pharmacists to stay abreast of disease status patterns, maintain adequate pharmaceutical stocks, access drug information systems, view patient health information, and use tools to calculate individual drug doses and accurately convert between units of measure. Mobile devices can also help pharmacists, turning smartphones into point-of-care diagnostic devices like otoscopes or blood pressure monitors. Mobile apps can also help patients manage disease states, improve therapy adherence, and capture important medical histories [64].

The coronavirus (COVID-19) pandemic has been a powerful impetus to accelerate technology deployment. In the age of digital health technologies, the focus of new models has shifted to virtual visits, virtual care, remote monitoring of patients and websites, and chatbots (for risk assessment, screening, screening).36 This pandemic has demonstrated the usefulness of digital health. solutions and represents an opportunity to integrate these solutions into our healthcare systems. More than ever, digital technologies and remote assistance have been integrated into our daily lives and, above all, into health. As a result, the digitization of healthcare practices is increasing exponentially [65]. As part of its National Health Plan for COVID-19, the Australian Government has accelerated the delivery of electronic prescriptions. Australian pharmacists can offer a range of paid services (medical tests, diabetes check-ups, home medication reviews and home medication management reviews) via telemedicine. The impact of digitization on health has been significant and is expected to be even greater in the future. To appreciate this, a broader perspective must be taken. Achieving broader health system goals, including quality, access, efficiency and equity, is the goal against which new digital health services must be measured.

Decisions to introduce new digital health services at different levels of the health system are best based on evidence of their effectiveness in relation to health system goals. These goals in a

broader sense remain unaffected by the digitization process. Management must be designed and adapted to adequately capture all relevant changes [66-67].

Many digital health technologies are highly dependent on their acceptance and proper use by healthcare professionals. This can lead to new medical professions as well as existing healthcare professionals acquiring new skills and competencies to work with new digital healthcare services. Co-creation in the development of new digital health services may make sense to increase acceptance and ease of use in practice. The experience of professionals using the technology is also critical to monitor and incorporate into any assessment.43 When digital health technologies are well understood, designed and deployed, healthcare professionals can coexist with them, which can provide some relief for spend more time with patients or perform salvage tests [68].

Digital health systems can also empower and engage patients and make them co-creators of care. This joint decision-making by physicians and patients requires trust, partnership and transparency in their interactions. Healthcare professionals become collaborators in the patient's journey to health, providing empathy and a human touch to support patient well-being.

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Client Interventions: Clients are community members who are potential or current users of health services, including health promotion activities. This group also includes caregivers of clients using health care. Interventions for health professionals: Health professionals are members of the medical team who provide health services. Health system interventions or resource managers: Health system and resource managers are involved in the management and oversight of public health systems. Interventions in this category reflect management functions related to supply chain management, health care financing, and human resource management. Data Services Interventions: Data services consist of cross-functional capabilities to support a variety of data collection, management, use, and sharing activities.

In many countries, pharmacists were among the first healthcare professionals to adopt all four pillars of information systems listed above to optimize pharmaceutical care services. Managing thousands of medications in stock, checking drug interactions, and facilitating sequencing by analyzing substitution rates are just a few of the reasons pharmacists are often used to working with computers as physicians adopt electronic prescribing systems. Pharmacists have a structured mindset that comes from a rigorous educational track. They like to analyze data and support decision tools derived from reliable data systems

The profession of pharmacist is undoubtedly a profession that has a certain technical aura. Therefore, it has the perfect predispositions and skills to offer patients more digital health services.

Some of the key areas where digital technologies will impact the pharmaceutical industry can be summarized as follows: Integrating wearable data into decision-making: As more and more wearable devices are able to monitor an increasing amount of health data and well-being, the well-being of patients. , the patient, these data can be used as digital biomarkers in pharmaceutical decision making. Digital biomarker data can be described as objective and quantitative data collected by wearables, wearables, and even devices or implanted devices to track digestive health. Consider smartwatches with proven ECG apps that can help the pharmacist determine the effectiveness and safety of cardiac procedures. Or a meditation device that provides data about a

patient's state of mental relaxation, which may help improve the effectiveness of potential migraine treatments. There are many examples where pharmacists can ask how they can use this data to improve their services by predicting outcomes, adverse events and patient satisfaction. Once pharmacists have access to this data, they can interpret patients' vital signs in real time and communicate them to their primary care physician or specialist to optimize pharmaceutical care as needed. Nowadays, such access should be possible, but not universal.

Use of health apps: As healthcare moves to phone-based access models, patients will have access to an increasing amount of digital biomarker data 24/7. The global interoperability of these data is increasing due to the increasing standardization of health data. This, along with computers becoming faster and mobile phones becoming more powerful, will make the patient's mobile environment a hub of care information. As with wearable devices, pharmacy information and communication technology systems should ideally connect to these patient environments, exchange patient informed consent data, and turn it into valuable tools for care delivery . BR

Finally, this becomes important as digital therapy (DTx) becomes more and more integrated into the standard of care. DTx provides patients with evidence-based, high-quality software-guided therapeutic interventions to prevent, manage, or treat a wide range of physical, mental, and behavioral conditions [69–70].

Automated robots to support robotic dosing processes, packaging systems to create individualized doses, and chatbot information technology to answer frequently asked questions are examples of robotics that can improve the efficiency of the pharmaceutical process. Robotics can also reduce dispensing errors, leading to avoided hospitalizations, deaths and costs for health systems.

Conclusion

A large amount of health data provides the opportunity to use more artificial intelligence and machine learning in pharmacy practice to solve important problems related to the management and use of medicines. Trend analysis on large data sets can reveal the risk of adverse events in individual patients, behavioral aspects, compliance profiles, etc. A pharmacist is a professional expert who can extend the knowledge of a data scientist to create services. Understanding the terminology and concepts used in AI will help pharmacists to work constructively with data scientists to develop models that improve patient care. Digital health systems can also empower and engage patients as co-creators of care. Joint decision-making by healthcare professionals and patients requires trust, a sense of partnership, and transparency in their interactions. Healthcare professionals become partners in the patient's journey to health, but still provide empathy and a human touch to support patients' well-being.

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THE SCIENTIFIC DISPUTES OF THE KEY ISSUE RELATED TO FEATURES, ASPIRATIONS, PROSPECTS, PROGNOSIS, ACHIEVEMENTS, PERCEPTION AND CHALLENGES OF THE PHARMACIST'S OCCUPATION IN MEDICINE AND HEALTHCARE

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ABSTRACT

The main goal of the study was to analyze the key issue related to features, aspiration, perspectives, prognosis, achievement and challenges of the pharmacist profession in medicine and health care. The study was a quantitative investigation and analysis of the features of inclination, achievements, tenacities, innovations, aspirations and perspectives of pharmacists' profession in Georgia and globally by using questionnaires. Were conducted a survey study. The in-depth interview method of the respondents was used in the study. The 7 types of approved questionnaires were used (Respondents were randomly selected): Questionnaire for chief pharmacists: 410 chief pharmacists participated in the study. Questionnaire for patients: 1506 patients participated in the study.

Questionnaire for the employed pharmacy faculty-student: 222 employed pharmacy faculty students participated in the study. Questionnaire for health-care specialists: 307 public health specialists participated in the study. Questionnaire for pharmacist specialist, 810 pharmacist specialists participated in the study. Were used methods of systematic, sociological (surveying, questioning), comparative, mathematical-statistical, graphical analysis. The data were processed and analyzed with the SPSS program. Were conducted descriptive statistics and regression analyses to detect an association between variables. Statistical analysis was done in SPSS version 11.0. A Chi-square test was applied to estimate the statistical significance and differences. We defined $p< 0.05$ as significant for all analyses. Were sub studied the scientific disputes of the key issue related to features, aspirations, perspectives, prognosis, achievements and challenges of the pharmacist's profession in medicine and healthcare. According to the study results, the respondents' vast majority considered that the issues to for pharmacists were in need of the further regular studies or trainings in the following fields: new medications, issues of pharmacotherapy of certain diseases, pharmacology and pharmacotherapy, drugs toxicity. From the study results it is obvious that in the higher pharmaceutical institutions' pharmaceutical educational programs and curriculum need upgrade, renewal, modernization and adaptation to the new modern medical challenges. Therefore, continuous pharmaceutical educational programs should be created. These programs should be more focused on new medications, pharmacotherapy, drugs toxicity and dosage, routes of drug administration, selection of OTC drugs, cost-effectiveness and cost-benefits of drugs. A clinical pharmacist is in no way a competitor of a doctor, on the contrary, he must refer patients who need qualified medical care to a doctor. It is difficult to imagine that a pharmacist does not know the alphabet of medicine and does not have relevant knowledge of the main clinical syndromes. Must have a particularly good knowledge of the nomenclature of medicines (mainly over-the-counter medicines). In essence, a clinical pharmacist must provide a defined pharmaceutical supply and make a decision about the dispensing of the drug. The respondents' vast majority considered that pharmacist should provide assistance in teaching patients to understand the prescribed drugs intake rules. According to that higher quality pharmaceutical service could be only provided by the pharmacists of higher pharmaceutical education, graduated from the authorized, accredited and licensed by the state higher education institutes and universities.

Keywords: Issue, features, aspiration, perspectives, prognosis, achievement, challenges, pharmacist, profession, medicine, health care.

Introduction

The pharmacists' role is expanding in health-care services. That mentioned as a new report from the International Pharmaceutical Federation (FIP). Pharmacy is a gate toward healthcare. Pharmacist supporting population to hold better health. Consideration the present situation of patient interest in health care. Present pharmaceutical services connected to self-health care and the significance that pharmacist professionals drive the health care frame systems in the new modern direction. It sets out the modern supervisors of the self- healthcare system and deeply changes on the new direction of health care schemes [1-2].

Responsible administering of drugs involves that healthcare network mediator capabilities and activities are balanced to assure that patients get the right drug, on the proper time, using properly and patient have profited from them. Delivering the right drugs into patients' demands commitment of all representatives, inclusive Government and a desire on how to consolidate private and public interests and mobilize sources. That is significant for the public to be

guaranteed that expenses on pharmaceuticals productions are an equivalent cost of cash. On the viewpoint of the pharmacists' comprehensive academically field and their traditionary function in composing, qualifying, delivering and ensuring drugs. A pharmacist is informing customers, consumers and patients on the drug using; they are greatly positioned to suppose professional liability for the monitoring of pharmacotherapy. They are members of the healthcare team immediately engaged in patients' health care services. Their responsibility is to assistance patients in using their drugs, which is impossible to do alone. Thus, in terms pharmacists' profession have been progressed. New type pharmacists have done the work a in more efficient way. Pharmacists holding the higher, university-level education. They understand the biochemical mechanisms of metabolism, mechanisms actions of drugs, medicines pharmacotherapeutic characteristic, side effects of drugs, potential interactions of drug and the argumentations monitoring. It is conjugated of specialized knowledge of biochemistry, anatomy, therapy, physiology, pathology, pharmacology and other pharmacy subjects. The pharmacists explain this particularized knowing when communicating with physicians, patients and another health care providers [3-6].

Being healthcare occupational means of to be a member of a group, which is centered on one purpose: serving with a patient to obtain better health. Pharmacist plays the centric role on the delivering of communication to patients and society about using of medicines. They effectively cooperate with doctor prescribers to assure a general treatment to patients by the delivery information and advice. The pharmacists are involved in a multidisciplinary treatment to the contribution the rational pharmacotherapy. They sufficiently informing patients and common society about the adverse influences of the drugs. They are monitoring these side effects via partnership together with different health care vocational. Pharmacists provide education on medications, disease states and the lifestyle issues as a part of clinical prevention, as well as educational programs to groups on issues such as drug abuse or others that are an example of population health activities. Pharmacists do counsel on a wide range of health promotion products found in the typical retail pharmacy such as sunscreens, dental hygiene products or vitamin and mineral products. Moreover, pharmacists provide immunization services and participate in screening activities [7-8].

Though the quantity of pharmaceutical productions on the world market is growing, the approach of vital medicines is till now lacking in a lot of parts of the worldwide. Health care expenses rise and the technological, social, political and economic conditions change have made the health care transformation crucial across the worldwide. The renewed treatments are required reforms at the personal and public levels to ensure effectively, quality and safe pharmacotherapy to the patients in more ever complicated surroundings condition [9-10].

The pharmacists hold the great condition to satisfy the necessity for health care vocational to ensure effective and safe using of medicines. To do this, pharmacists should suppose higher liability than they at the present time do for the monitoring of pharmacotherapy for the customers, consumers and patients they are serving. That liability goes completely behind the traditional distributing and dispensing practices that have long been the maintenance of pharmacy activities [29]. Pharmacists' liability should be enlarged conclude controlling of the pharmacotherapeutic progression and thereby improve therapeutic outcomes and patients' life quality, advising with doctor prescribers and consolidating with different health care workers and practicians on behalf of patients [30]. Pharmacists' involvement into pharmaceuticals may consist in drug storage, drug supply, dispensing, manufacturing, formulation, distribution, marketing, quality warranty, licensing, information management, monitoring, development, education, and research. Drug

supply and medicine information management system is the main part of pharmaceutical services and proceeds forming the basement of pharmacy activities. The higher pharmaceutical schooling and education hold an appropriate duty and responsibility to generate post-graduate professionals who are qualified and authorized to provide the pharmaceutical care services. Sufficiency results promote to quality warranty by provided that easily approachable working standards [11-12].

Community pharmacists' activity is at the forefront of medical care, working at their own pharmacies or in the private ones. Pharmacist's job is all about helping the public, as they participate in the medicines distribution and offering advice to patients and maintaining their health. Pharmacist work is a very demanding occupation in the world. Pharmacists usually are greatly honorable members of the society. Changes in the role of pharmacist and pharmacy community as a medical supplier accelerate along with the fast-moving environment. Today to offer advanced medical services pharmacies deliver educational information at multiple points of contacts and also to raise awareness of the disease are of great importance. These include over the counter (OTC) and the personal care aisle, a pharmacy counter, specialties publications and pickup areas prescription. These innovations are useful not only for customers' pharmacies but also create opportunities for pharmaceutical marketers, measurable return on investment. The educative center of occupational programs and schemes growingly identifies the necessity for the possibility to use the knowledge obtained via simulation laboratories or experiential studying, which needs corresponding faculties and personnel conditions to satisfy these educational necessities. Innovations in faculties and personnel positions with greater consideration to learning, or practice also include accentuation on the research within the framework of PharmD programs. There is a need to encourage the pharmacy's graduates to encounter that, as well as to conducting PharmD degree programs in postgraduate level masters or doctoral scale in philosophy or promoted scientific basement grants for the pharmaceutical, biomedical, clinical, administrative and other fields of researches in the pharmacy direction [13-14]. In the higher pharmaceutical institutions and academy, the health occupations schooling-education programs should contribute career possibilities for pharmacy faculty post-graduates. Pharmacy schoolmaster must make more energetically engaged at the growth for particular training /educational possibilities to arrange and overlook the newest generation for pharmacy faculty or program personnel positions in higher education institutions. In order to engage pharmacy faculty post-graduates to take part in the scientific research. Pharmaceutical faculty program post-graduate professionals should be supported to research the capacity function and role of various pharmaceutical, medical/health care, academic and educational, research and scientific program schemes for to growth consideration in inter-professional scientific groups upon the health professions formation, teaching and education; which is very significant for the high-quality patient care services [15-16].

The health systems of many other countries have developed similar claims of competence for pharmacists. As a critical care pharmacy specialist, it is difficult to describe a typical day, but usually busy with the elements of a pharmacist's support process during the day. It is believed that the clinical pharmacist will be responsible for all aspects of the administration of the drug. Every day, the clinical pharmacist assesses and evaluates new patients and updates the progress of previous patients, identifies drug-related issues and potential problems, develops a problem list and treatment plan for optimal dosage based on the renal and hepatic function, potential drug interactions and serum concentration. The clinical pharmacist joins the multidisciplinary rounds with the intensive care team and applies the treatment plan by teaching the medical residents the

correct order of entry or by entering the orders themselves according to a collaborative practice agreement and by them. documenting in an electronic health record. A major contribution to medication management is identifying therapies that are no longer needed, reducing the cost and risk of adverse events, and supporting antimicrobial stewardship programs with infectious disease physicians and pharmacists. The clinical pharmacist also supervises the performance of quality measures such as the appropriate prevention of venous thromboembolism, the appropriate use of drugs to prevent stress gastritis, the addition of aspirin to increase the levels of troponin associated with l coronary ischemia, and discussing the need for central tubing and urinary catheters. The clinical pharmacist educates the team on drug-related topics and related literature through tours and didactic discussions. A clinical pharmacist is always available for emergencies and resuscitation, and to answer questions related to mediation [17-19].

For each new patient, a member of the pharmacy team compiles a medication history from electronic records, family, patient, local doctors or pharmacies and documents in the electronic medical records. The clinical pharmacist will then cross-check this list to determine medication-related reasons for hospitalization, such as non-adherence or overdose, and advise on which medications to choose to avoid withdrawal reactions or other adverse events. While the clinical pharmacist has a more limited role in verifying drug orders in the electronic medical records and has little role in the actual distribution of drugs, the clinical pharmacist serves as a liaison with technicians and pharmacists specializing in parenteral products and drugs. Distribution systems to ensure medications are present when needed. Nurses have a formidable task of prescribing drugs, and the clinical pharmacist facilitates this process by providing information on intravenous injection compatibility and teaching unknown treatments [20-22].

Goal

The main aim of the study was to analyze the scientific disputes of the key issue related to features, aspirations, perspectives, prognosis, achievements and challenges of the pharmacist's profession in medicine and healthcare

Material and methods

Research objectives are materials of sociological research: the study was a quantitative investigation by using a survey (Questionnaire). The study was quantitative investigation by using survey (Questionnaire). The in-depth interview method of the respondents was used in the study. The 7 types of approved questionnaires were used (Respondents were randomly selected): Questionnaire for chief pharmacists: 410 chief pharmacists participated in the study. Questionnaire for patients: 1506 patients (customers of drug-stores) participated in the study. Questionnaire for the employed pharmacy faculty-student: 222 employed pharmacy faculty students participated in the study. Questionnaire for health-care specialists: 307 public health specialists participated in the study. Questionnaire for pharmacist specialist, 810 pharmacist specialists participated in the study.; Totally 3888 respondents were interviewed in Georgia. We used methods of systematic, sociological (surveying, questioning), comparative, segmentation, mathematical-statistical, graphical analysis. The data was processed and analyzed with the SPSS program. Results and discussion: The survey was conducted through the questionnaires.1506 patients were interviewed in Georgia. Questions and answers are given in the tables. On each question are attached diagrams or table. Questionnaire and diagrams are numbered. Study of the data was processed and analyzed with the SPSS program. We conducted descriptive statistics and regression analyses to detect an

association between variables. Statistical analysis was done in SPSS version 11.0. A Chi-square test was applied to estimate the statistical significance and differences. We defined $p < 0.05$ as significant for all analyses. The study's ethical items. In order to provide the study's ethical character each participant of it was informed about the study's goal and suggested of willingness of the work to be done. So, the respondents' written or oral compliance was got on that issue. All the studies were carried out by the selected organizations administrations' previous compliance. Were used Informed consent form for each respondent to participate in an anonymous survey. During the whole period of research, the participants incognita was also provided. For the international rules and criteria' conformity this human subject comprising given study was discussed and confirmed on the Bioethics Committee sessions of the YSMU. In order to meet the objectives, set in the research we also used the results obtained through analysis of available official information, studies and opinions about pharmacists, as well as the methods of quantitative studies. We conducted descriptive statistics and regression analyses to detect an association between variables. Statistical analysis was done in SPSS version 11.0. A Chi-square test was applied to estimate the statistical significance and differences. The research implementation required the following sub studies: the scientific disputes of the key issue related to features, aspirations, perspectives, prognosis, achievements and challenges of the pharmacist's profession in medicine and healthcare.

Results and discussion

On the basis of performed study results the following have been found:

Clinical pharmacists today have the in-depth therapeutic knowledge and scientific skills to serve as pharmacotherapy experts in the medical setting. Establishing an Institute of Clinical Pharmacists has been talked about in Georgia for a long time, but it seems that it has not yet been officially established due to the inertia of the administrative infrastructure. At the same time, the medical, including pharmaceutical, infrastructure in Georgia is rapidly developing, and we can safely say that practice has forced some pharmacists to take on this role - in fact (functionally) the Institute of Clinical Pharmacists was created by life. For example: "receptionist pharmacists" of large pharmaceutical companies often have to consult patients, "consulting pharmacists" of insurance companies actually fulfill the function of clinical pharmacists [23-24].

As already mentioned, clinical pharmacy is a complex science. One of its characteristics and a distinguishing feature of neighboring medical fields is the integration of information technology with natural sciences (mathematics, engineering). In 2007, about 5,400 drugs were registered in Georgia, and their number is growing rapidly. The number of drugs is much higher in economically developed countries. Of course, manipulating this set of information is making a comparison analysis is not possible without specialized information systems, which requires not only the use of these sciences, but also integration with them. Therefore, in Georgia, as part of the project "Georgian Electronic Medical Encyclopedia" by Lali Dateshidze, work has been going on for several years to create an "automated workplace" for a clinical pharmacist [25-26].

The main difference between clinical pharmacists and conventional registered pharmacists is the ability of clinical pharmacists to interact with patients and that they can recommend specific drugs and drug dosages for a specific patient in order to monetize a drug. The term "pharmaceutical care" comes from clinical pharmacy. The two concepts are compatible and appear to have similar goals. One way to differentiate between the two would be to use the description clinical pharmacy as a pharmacy practice within a larger pharmaceutical supply system to which the pharmacist would contribute. The aim is to achieve pharmacotherapeutic results and improve the quality of

life of patients. Pharmaceutical care can be defined as "the direct and rapid delivery of medical care to achieve specific outcomes that improve the patient's quality of life". Thus, pharmaceutical care can be seen as part of clinical pharmacy [27-28].

The purpose of this statement is to help pharmacists understand pharmaceutical care. Such understanding must precede efforts to implement pharmaceutical care, which is a top priority in all practices. Many pharmacists have embraced the concept of pharmaceutical supply with enthusiasm, but there has also been significant inconsistency in the way it has been described. Some characterize it as a new name for clinical pharmacy; Others describe it as any action by pharmacists that can lead to favorable outcomes for patients [16-18]. Directly in the clinical environment, there are many goals and tasks that clinical pharmacists can fulfill. For example, in the United States, clinical pharmacists work in almost 80% of medical institutions, which contributes to the rational use of drugs and saves drugs by about 10-20%. The involvement of a clinical pharmacist is important at all stages of creating a treatment algorithm. A clinical pharmacist is required to participate in the development of a drug use policy, collaborate with specialists in the development of methodological recommendations and guides for the treatment of specific diseases, participation in the sale of drugs and the manufacture of drug formulations in processes [29-30].

The profession of pharmacist has yet to develop into a clinical profession in Georgia and is now more focused than ever on moving from a product-oriented profession (including procurement, preparation and evaluation of medicines) to a product-oriented profession patiently. The pharmacist has an important role to play in ensuring the health of the patient. In 2006, the American College of Clinical Pharmacy (ACCP) identified the largest differences between clinical pharmacists and the regularly registered pharmacists as clinical pharmacists [23-25], which improves the quality of life of patients. Therefore, pharmaceutical care can be considered as a form of clinical pharmacy. The establishment of clinical pharmacy in Georgia can be considered when the registration of clinical pharmacy appeared in the National Register of Qualifications, however, there is still no framework, a document that would define the role of clinical pharmacy and career opportunities, although many Clinics participate in international clinical trials, in which, according to the international protocol, a clinical pharmacist should participate , although at this stage such a profession and staff in clinics are not established, it turns out that general pharmacists formally perform the functions of a clinical pharmacist , what confirmed in our survey. The role of the pharmacist in Georgia needs to be developed, which remains a problem: some clinical guidelines have been developed in Georgia [31-32].

Unfortunately, we have not yet seen a pharmacist in the writing group for any of the guidelines. We already consider the participation of the clinical pharmacist in the recommendation development process to be necessary. The involvement of a clinical pharmacist is important at all stages of creating a treatment algorithm.

A clinical pharmacist is required to participate in the design of a drug use policy, collaborate with specialists in the development of recommendations and methodological guidelines for the treatment of specific diseases, and participate in the purchase and sale of drugs, the creation of medicinal formulations, etc. The pharmacist profession is not yet a clinical profession, but is more focused than ever on its transformation from a product-oriented profession (including the procurement, preparation and evaluation of medicines) to a patient profession - job-oriented. The clinical pharmacist plays an important role in ensuring patient health [33-34].

In 2006, the American College of Clinical Pharmacy identified a key difference between clinical pharmacists and regular registered pharmacists. Clinical pharmacists improve the quality of life of patients. Therefore, pharmaceutical care can be considered a form of clinical pharmacy. The establishment of clinical pharmacy in Georgia in 2019 can be considered as the moment when an entry for clinical pharmacy appeared in the national rating system, however, there is still no regulatory document defining the role of clinical pharmacy [35-36].

Clinical pharmacy and career opportunities, although many clinics across the country participate in international clinical trials, which according to international protocol should have a clinical pharmacist participate, although at this stage such a profession and staff clinics turns out to be general practitioners formally fulfill the functions of a clinical pharmacist, which is confirmed in our survey that a pharmacist is needed to expand the role at Georgia. Clinical pharmacy as the field of pharmacy concerned with the science and practice of rational drug use. With this definition, the possibilities for clinical pharmacists are endless. Many career options are available to pharmacists seeking clinical opportunities in their practice. As a clinical pharmacist, you can provide general clinical services. However, there are several highly specialized areas that cover different patient groups [37-38].

Pharmaceutical supply will be an important new concept, representing the growth of the profession beyond clinical pharmacy as commonly practiced and beyond the other activities of pharmacists, including the preparation and dispensing of medicines. In Europe, however, all these professional activities are important and strongly support the need for pharmacists to be involved. In practice, these activities should be integrated and result in the pharmaceutical care of individual pharmacists for individual patients [36-39]. The philosophy of pharmaceutical care (PA) is the sum of the pharmacist's responsibilities to meet all of the patient's medication-related needs through direct patient care and collaboration with other facets of the healthcare system. Clinical pharmacists have in-depth therapeutic knowledge and scientific skills that enable them to act as experts in drug therapy in healthcare settings. The American College of Clinical Pharmacy (ACCP) defined clinical pharmacy as a discipline in which specialized pharmacists are involved that deal with the science and practice of rational drug therapy. Clinical pharmacists apply scientific knowledge to ensure and advise on the best use of medicines for optimal drug therapy. In addition, they participate in various [39-40]

Research activities to generate new knowledge and practical skills that can further improve health and quality of life. Over the years, the role of pharmacists has evolved to be part of a multidisciplinary healthcare team, participating in patient advisory groups and reviewing the patient profile with the aim of identifying and resolving drug-related problems. Pharmacist interventions such as B. Patient counselling to improve adherence and compliance, have contributed to the steady development of clinical pharmacy services around the world, the lack of specific legislation and recognition by other healthcare providers [41-42].

Possible reasons may include a lack of acceptance of the pharmacist's professional position by other healthcare professionals, poor leadership skills, patient perceptions, and the existence of communication gaps between pharmacists and physicians. These challenges are particularly noticeable in developing countries. Physician expectations and perceptions about the roles and responsibilities of pharmacists are the main factor influencing the advancement of clinical pharmaceutical services in hospitals [43-44].

Recent reforms to hospital implementation guidelines state that pharmacists should be assigned to hospitals for the benefit of patients. Prioritizing national guidelines, the undergraduate pharmacy

curriculum shifted toward patient-centered practice by including a mandatory one-year internship program as part of academic training. Hospital clinical pharmacists began to work as an integral part of healthcare teams. Clinical pharmacists sporadically provided various care services to patients.

This includes managing drug therapy, dose adjustments, interventions to optimize drug therapy, and providing information about drugs to healthcare professionals and patients. Hospital. A better understanding of the perspectives of healthcare professionals regarding clinical pharmaceutical services may provide a better opportunity to identify future challenges and opportunities for clinical pharmacists in the hospital. Therefore, the present qualitative study aimed to examine the challenges and opportunities of clinical pharmaceutical services provided in the hospital from the perspective of healthcare professionals [45-46].

A clinical pharmacist is in no way a competitor of a doctor, on the contrary, he must refer patients who need qualified medical care to a doctor. It is difficult to imagine that a pharmacist does not know the alphabet of medicine and does not have relevant knowledge of the main clinical syndromes. Must have a particularly good knowledge of the nomenclature of medicines (mainly over-the-counter medicines). In essence, a clinical pharmacist must provide a defined pharmaceutical supply and make a decision about the dispensing of the drug [47-48].

While curricula have been adjusted to prepare pharmacists for this new role, changes in practice have focused on other issues, such as: B. the emerging Covid epidemic which has brought about significant changes in the medical care industry in terms of practice and law. Clinical pharmacy should be viewed as a different professional approach than hospital pharmacy. It is important for pharmacists to have a complete picture of a patient's condition so they can assess drug therapy and communicate effectively with other members of the healthcare team. Pharmacists need to establish a good relationship and connection with the multidisciplinary medical team by asking them to move from the pharmacy to the wards where they dispense medication and see doctors.

Staffing issues and a lack of trained clinical pharmacists have resulted in pharmacists being unable to work in clinical settings. In particular, the following pharmaceutical support functions were missing [49-50].

The concept of pharmaceutical care has evolved into integrated medication management as part of clinical pharmacy. Drug treatment has expanded as treatment regimens have become more complex and specialized, particularly in more complex patients who may have five comorbidities and are taking an average of eight drugs at a time. To achieve the best results of drug therapy in these patients, systematic and complex drug therapy is required [51-52].

More than one third of respondent pharmacists were not satisfied with professional career, about one third of them were partially satisfied with professional career (See fig.1). It is significant, that pharmaceutical companies make study of their own pharmacists' satisfaction with professional career. The pharmaceutical companies should study a combination of all factors that affect the satisfaction with professional career.

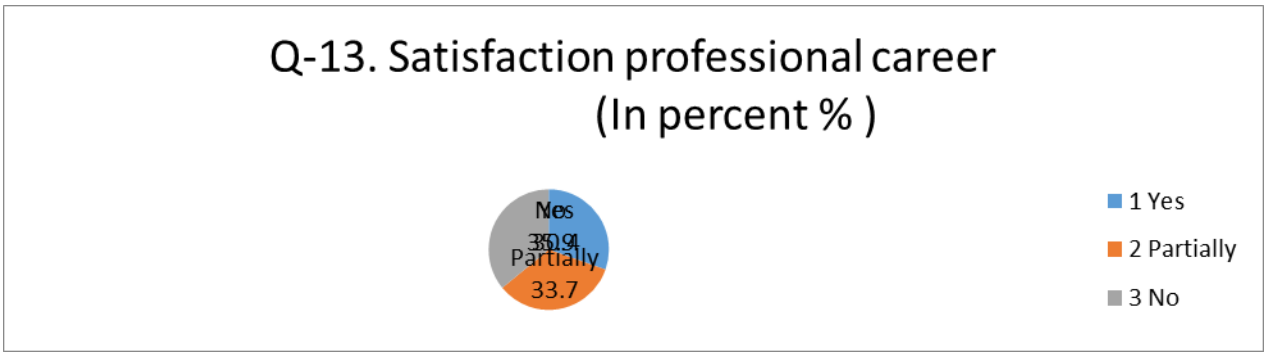

Figure 1. Satisfaction professional career of the respondents (pharmacists).

About a quarter of respondent pharmacists were not satisfied with work; more than one third of them were partially satisfied with work (See fig.2).

Figure 2. Satisfaction with work of the respondents (pharmacists)

Base on study results it is considerable, that pharmaceutical companies make study of pharmacist's work satisfaction. The pharmaceutical companies should determine the combination of factors that effect on the pharmacists' work satisfaction. Therefore, we recommend to the pharmaceutical companies to study and analysis features of main factors that influences on the pharmacists' job gratification, See Table -1. [53-54].

Table 1. Report of impacting factors, which influenced on the respondents (pharmacists) work satisfaction, estimated under the 5- point scale system

Q-15. Estimation of the impacting factors influenced on the work satisfaction (estimation for each factor)	Mean	Median	Std. Deviation
q15_1 The content of work	4.03	4.00	1.061
q15_2 Position held	3.92	4.00	1.025
q15_3 Correspondence of qualification to work	4.09	4.00	1.009

q15_4 Correspondence of nature of work to my capabilities, aspirations, and inclinations	4.10	4.00	0.990
q15_5 Existence of perspective for professional promotion	3.85	4.00	1.171
q15_6 Existence of perspective for career promotion	3.81	4.00	1.204
q15_7 The possibility to enhance improve qualifications	4.03	4.00	1.085
q15_8 - Existence of a high degree responsibility for the work results	4.02	4.00	1.124
q15_9 Regimen of work	3.66	4.00	1.145
q15_10 Labor salary	2.43	3.00	1.253
q15_11 Existence of the system of benefits scheme for employees	3.52	4.00	1.243
q15_12 Support and assistance of a manager (chief)	4.17	5.00	1.090
q15_13 Direct relationships with manager	4.24	5.00	1.062
q15_14 Relationships to colleagues	4.57	5.00	0.815

During the research we found and evaluated some impacting factors which have influenced on the work satisfaction of pharmacists. These factors were: the content of work, position, correspondence of qualification to work; correspondence of the work nature to capabilities, aspirations, and inclinations of pharmacist; existence of perspectives for the professional promotion (enhancement) and the career promotion; the possibility to improve qualifications; existence of a high degree of responsibility for the work results, regimen of work, labor salary; existence of the system of benefits scheme for employees; support and assistance of a manager (chief); direct relationships with manager and colleagues.

About a quarter of respondent pharmacists (pharmacists) have realized professional capabilities, skills and habits partially; less than 50% of them - of own potential; about half of them have realized professional capabilities, skills and habits partially; more than 50% of them - of own potential (See fig.3). Pharmaceutical companies should create constructive working conditions for pharmacists to maximally realize their professional capabilities, skills and habits. This will increase the quality of pharmaceutical care in pharmacies [55-56].

During the research there were found and evaluated the factors, influencing on the pharmacists' professional development: interesting and valuable (informative) work; the favorable (prosperous) psychological climate within the colleague's team; possibility of the career growth; possibility of the professional education or training; the social importance of the profession; independence in work (See tabl.2) [57-58].

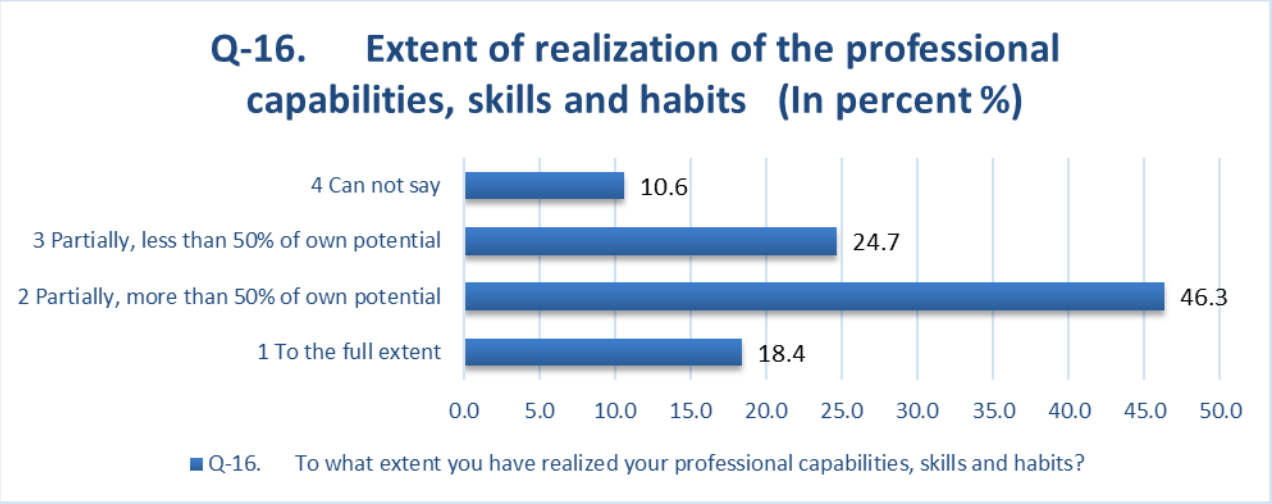

Figure 3. Extent of the respondents' (pharmacists) realization of the professional capabilities, skills and habits

Table 2. Report of factors, influencing of the respondents' (pharmacists) professional development evaluated under 5-point scale system.

Q-17.Evaluation of the factors, influencing on the professional development of the respondents (evaluation for each factor)	Mean	Median	Std. Deviation
q17_1 Interesting and valuable work	4.03	4.00	0.967
q17_2 The favorable psychological climate within the colleagues team	4.04	4.00	1.008
q17_3 The possibility of career growth	3.90	4.00	1.075
q17_4 The possibility of professional education or training	4.15	4.00	0.969
q17_5 The social importance of the profession	4.11	4.00	1.010
q17_6 Independence in work	4.08	4.00	1.036

The respondents (pharmacists) ' majority considered that education should not be ceased; the minority of them - that it is possible to cease education after getting specialist diploma (degree) or the specialist certificate (See fig.4). On our view it is of the crucial necessity that all the pharmacists should realize, reconsider and understand the importance of continuous pharmaceutical and medical education in constantly. Further diploma pharmaceutical education is a very important factor for the upper qualification of pharmacists and essential index for the high-grade of pharmaceutical care [59-60].

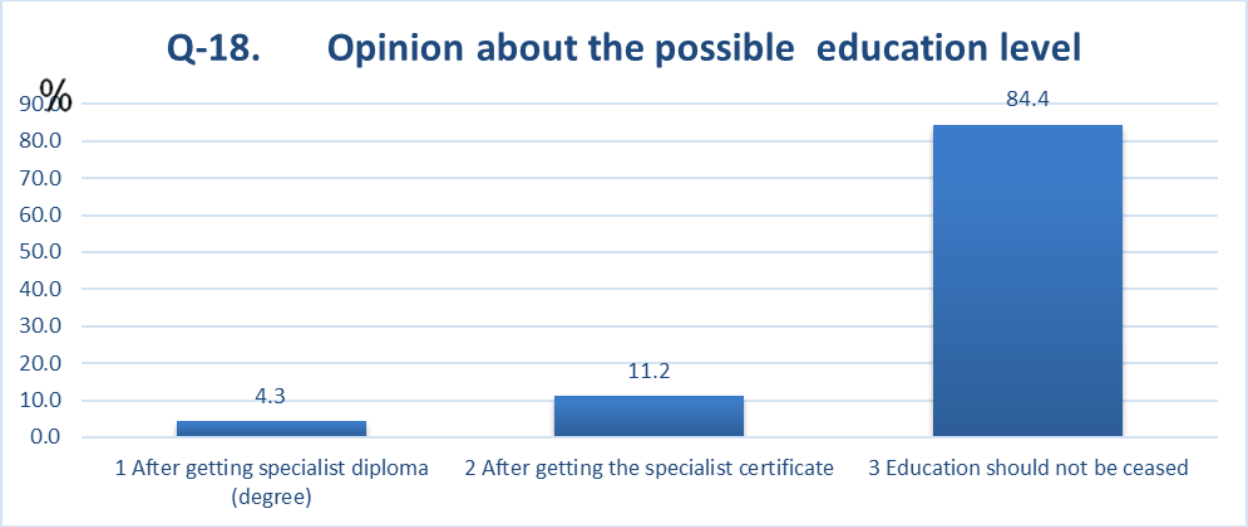

Figure 4. The respondents' (pharmacists) opinion about the possible education level.

The minority of respondent pharmacists had not used knowledge in their practice, obtained from professional publications; less than half of them had partially used that knowledge (See fig.5). It is very important that pharmacists have to use knowledge obtained from the professional publications, journals and the modern pharmaceutical literature in their practice [61-62].

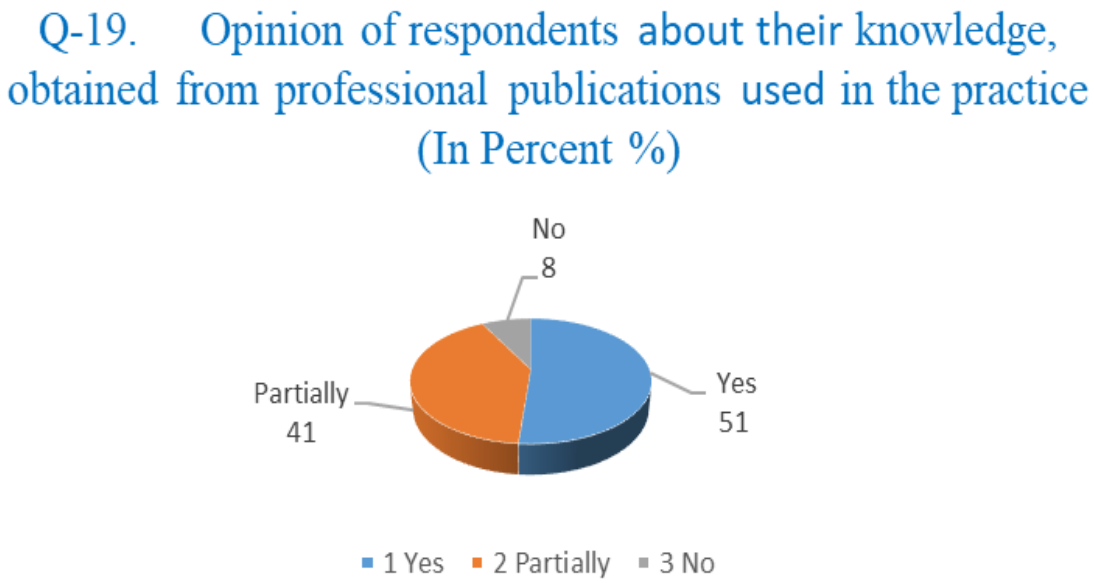

Figure 5. Opinion of the respondents about their knowledge, obtained from professional publications used in the practice

Mostly essential pharmaceutical activity issues for the respondents' (pharmacists) majority were: new drugs, generic drugs, chemical and brand names of them; psychology of communication (relationships) with customers; issues of pharmacotherapy of certain diseases, pharmacology,

pharmacodynamics, pharmacokinetics and pharmaceutical care (See tabl.3). It is apparent, that in the higher pharmaceutical education universities programs should be emphasized on the following subjects: pharmacotherapy, pharmacology, pharmaceutical care, clinical pharmacy and drugs toxicity.

The minority of respondents (pharmacists) had neutral attitude toward learning and qualification upgrading (improvement) study courses (See fig.6). The professional trainings, complementary educational programs, skill enhancement learning instruction, professional workshops are appear to be very necessary for the further professional advancement , vocational development and for occupational improvement strategics [63-64].

Table 3. Mostly essential pharmaceutical activity issues for the respondents (pharmacists).

Q-20. The most essential (relevant) for respondents issues of pharmaceutical activity (several answers were possible)	Count	Percent (%)
1. New drugs, generic drugs, chemical and brand names of drugs	518	64.0
2. Psychology of communication (relationships) with customers	478	59.0
3. Issues of pharmacotherapy of certain diseases	541	66.8
4. The safety, effectiveness and quality of the drugs	558	68.9
5. Pharmacology, pharmacodynamics and pharmacokinetics issues	572	70.6
6. The normative legal regulation of pharmaceutical activity	364	44.9
7. Drug technology issues	241	29.8
8. Pharmacognosy	110	13.6
9. Pharmaceutical organization and economics and pharmaceutical business	154	19.0
10. Pharmaceutical management and marketing	281	34.7
11. Pharmachemistry	90	11.1
12. Toxicology	96	11.9
13. Clinical pharmacy	267	33.0
14. Pharmaceutical care	487	60.1
15. Pharmaceutical analysis	77	9.5
16. Toxicological chemistry	50	6.2
17. Pharmaceutical technologies	86	10.6
18. Nutrition	95	11.7
19. Pharmaceutical cosmetics and perfume	178	22.0
20. Social pharmacy and Public Health	146	18.0
21. Computer technology and pharmaceutical information	140	17.3
22. Phytotherapy	132	16.3
23. Routes of drug administration	183	22.6
24. Drug forms and drug design	158	19.5
25. Drugs' toxic effects	196	24.2
26. Rules of drug administration	237	29.3
27. Cost-effectiveness and cost-benefits of drugs	124	15.3
28. Terms and conditions of storage of drug (conditions and shelf-life)	259	32.0

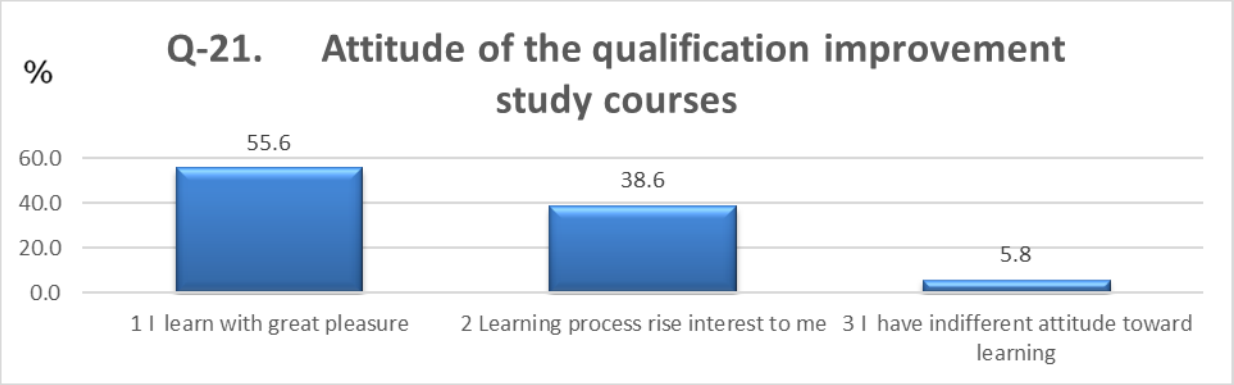

Figure 6. Attitude of the respondents to qualification upgrading (improvement) study courses

A large majority of respondents' (pharmacists) consider that the Government should make the certification of pharmacists (See fig.7). As revealed, it is very important that the occupation of pharmacist should become regulated health profession. To raise pharmacists' specialists' professionalism, Government should make the certification of higher pharmaceutical education pharmacists. That is very essential for pharmacist's professional perfection, for successful higher pharmaceutical education, for pharmacist self-realization, for pharmacist's career advancement, for to exist pharmaceutical continuous professional education, for pharmacist professional growth, for pharmacist job gratification, for pharmacist career satisfaction, for pharmacists much higher status between health care specialists. Pharmacist certification is essential for pharmacists economic (material) welfare , for allows pharmacists to realize fully the received knowledge from higher education institution in work by the full extent, for to have private pharmaceutical activity, for pharmacists vocational development , for correspondence of pharmacist qualification to work, for further improvement perspective for pharmacists' professional promotion, for possibility to career enhancement strategy, for to realize by the full extent pharmacist professional capabilities, skills and habits, for occupational growth, for pharmacists professional satisfaction, for career enhancement perspective, for satisfaction of income (salary). Therefore, pharmacists' certification should start immediately and pharmacist vocation should become regulated health profession like family doctors [65-66].

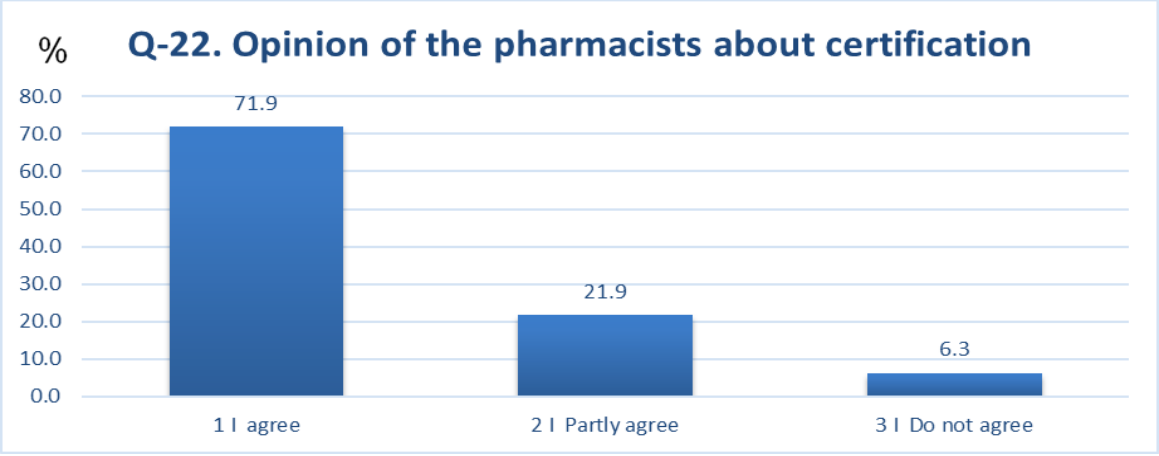

Figure 7. Opinion of the respondents (pharmacists), on the question- if the pharmacists' certification should done by the Government.

Less than half of respondent pharmacists are engaged in planning of professional career, more than a third of respondent pharmacists are engaged partially in planning of professional career (See fig.8).

Figure 8. The respondents (pharmacists) engagement in planning of professional career

During research were found and evaluated goals that achieve as a result through professional career for pharmacists. These goals for pharmacist were obtain more power and authority, much higher status, independence, self-realization, power, economic (material) welfare, professional growth and career advancement (See tabl.4).

Table 4. Report of the respondents (pharmacists) on the question – "What goals do you want to achieve as a result through professional career?"

Q-24. What goals do you want to achieve as a result through professional career? (Please evaluate each of the chosen option by 5 point scale system)	Mean	Median	Std. Deviation
q24_1 Obtain more power and authority	3.71	4.00	1.245
q24_2 Much higher status	3.84	4.00	1.203
q24_3 Independence	3.88	4.00	1.253
q24_4 Self-realization	4.08	5.00	1.203
q24_5 Power	3.16	3.00	1.449
q24_6 Economic (material) welfare	4.51	5.00	0.877
q24_7 Professional growth	4.54	5.00	0.858

q24_8 Career advancement (growth)	4.50	5.00	0.937

More than one third of respondent pharmacists are not satisfied with the balance between the workload and personal life, less than one third respondent pharmacists are partially satisfied with the balance between the workload and personal life (See fig.9). The balance between the workload and pharmacist's personal life should be more harmonized, comfortable, convenient, resourceful and more poised. That flexibility will further improve pharmacists' work ability and motivation toward the job [67-68].

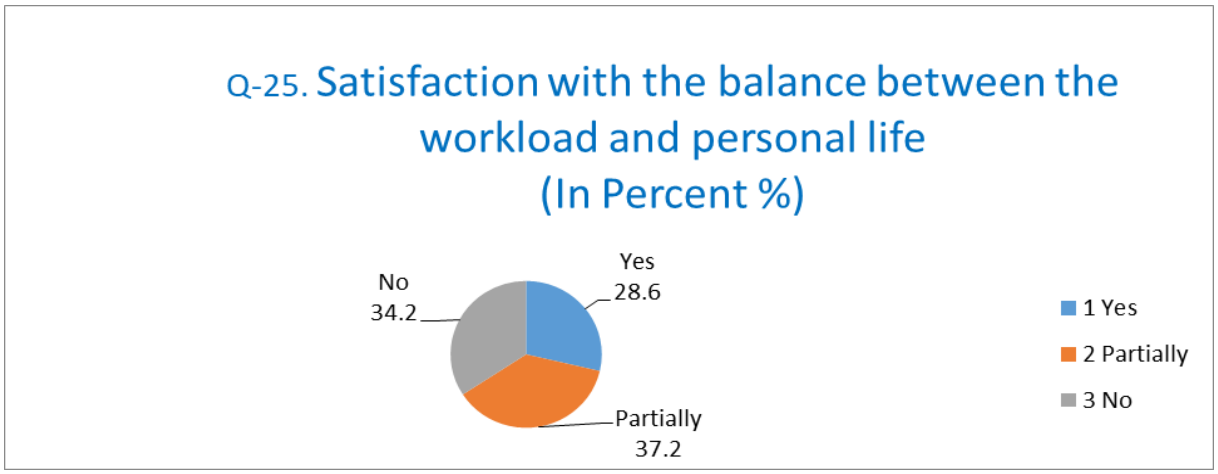

Figure 9. The respondents' (pharmacists) satisfaction with the balance between the workload and personal life.

Less than half of respondent pharmacists are not satisfied with the time duration of job, more than one third of respondent pharmacists are partially satisfied with the time duration of job (See fig.10). It is very important that pharmaceutical companies have created such working schedule and working conditions for pharmacists, which will contribute to improve pharmacists' satisfaction according the time duration of job. That flexibility working schedule and working conditions will further enhance pharmacists' work ability and motivation toward the job. These factors will improve the quality of pharmaceutical care in pharmacies.

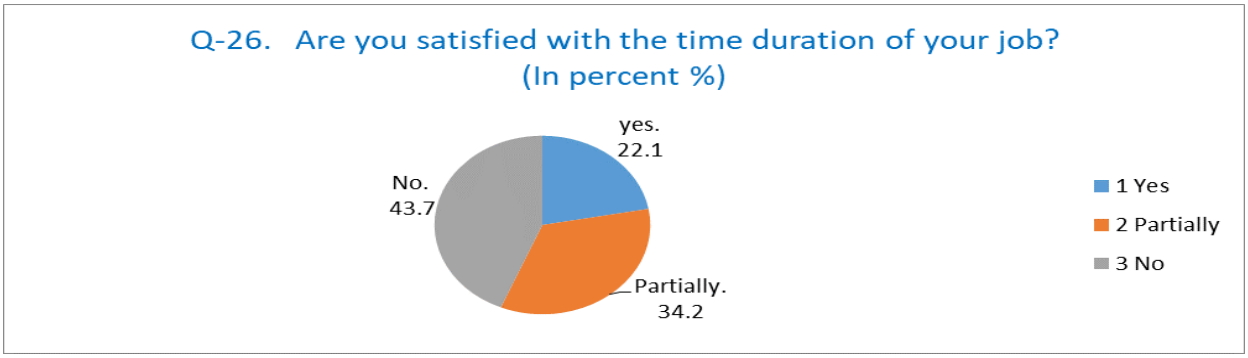

Figure 10. The respondents' (pharmacists) satisfaction with the time duration of job

The Majority of the respondents are not satisfied with income, a quarter of them are partially satisfied with income (See tabl.5). It should be noted, that pharmacist's satisfaction with income is a very sensitive factor that has a significant impact on the quality of pharmaceutical services performed in pharmacy. Therefore, pharmacist salary should be increased [69-70] according pharmacist' professional competences, occupational motivation, theoretical and practical knowledge, in our opinion pharmacist satisfaction with income could be enhance and regulate via creation pharmacists' periodic certification, licensing and accreditation systems in Georgia.

Table 5. Satisfaction of the respondents (pharmacists) with income

Q-27. Are you satisfied with your income?	Frequency	Percent (%)
1. Yes	83	10.2
2. Partially	206	25.4
3. No	521	64.3
Total	810	100.0

The majority of the respondent chief pharmacists searching for the specialists applied Internet and advertisements in mass media or in printed and electronic media (See fig.11).

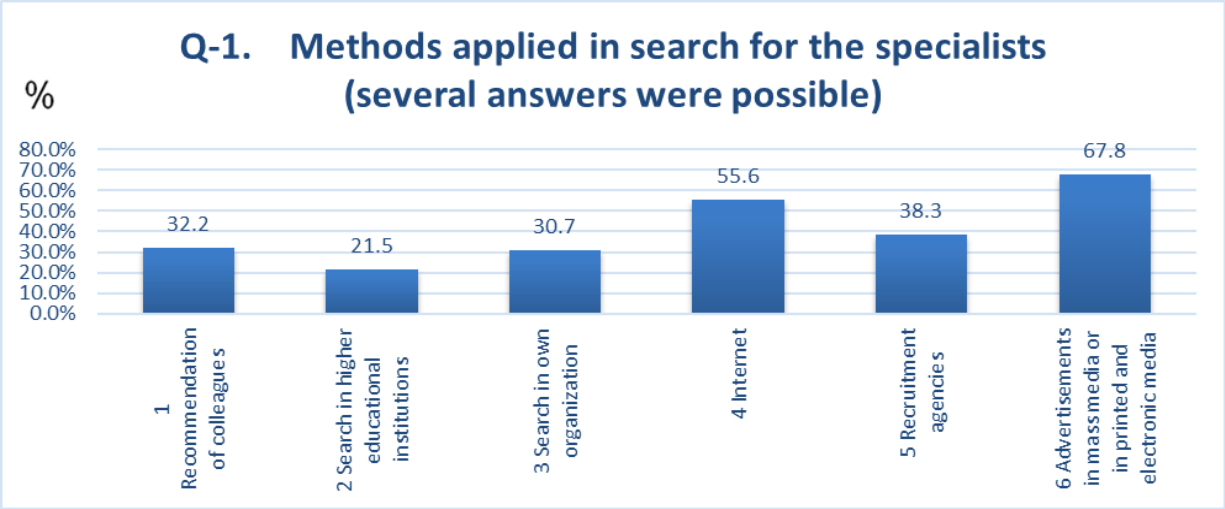

Figure 11. The methods respondents applied in search for the specialists

The main time length required for searching of pharmacists on vacant position by respondent chief pharmacists was up to 3 months (See fig.12).

Figure 12. Time required for searching of specialists on vacant position for the respondents (chief pharmacists)

The majority of the respondents (chief pharmacists) considered that main qualities, capabilities and skills required for pharmacists were ability to make decision fast and love towards their profession.
Less than half part of chief pharmacists considered that main qualities, capabilities and skills required for pharmacists were flexibility while changing the labor functions, ability to build up relations with people and high level of culture (See tabl.6) [71-72].

Table 6. The respondents' opinion about qualities, capabilities and skills required for specialists

Q-3. The qualities, capabilities and skills required for specialists (several answers were acceptable)	Count	Percent (%)
1. High intelligence level	46	11.2
2. Professional competency	120	29.3
3. Flexibility while changing the labor functions	166	40.5
4. Ability to make decision fast	254	62.0
5. Love towards the profession	210	51.2
6. Sense to get innovation	89	21.7
7. Ability to build up relations with people	179	43.7
8. High level of culture	186	45.4
9. Culture of speech	89	21.7
10. Orientation towards the creative work (focus on creativity)	108	26.3
11. High motivation to work	67	16.3

The majority of respondent chief pharmacists considered that main personal features required for a young specialist was attentiveness. Less than half of respondent chief pharmacists considered that personal features required for a young specialist was ability to work in a team, purposefulness, ability to learn, kindness, politeness and higher motivation to work (See tabl.7) [73-74].

Table 7 . The respondents' opinion about personal features required for a young specialist

Q-4. The personal features required for a young specialist (several answers were acceptable)	Count	Percent (%)
1. Goodwill or amiability	83	20.2
2. Initiative ability	153	37.3
3. Ability to work in a team	195	47.6
4. Purposefulness	176	42.9
5. Ability to learn	203	49.5
6. Kindness and politeness	175	42.7
7. Attentiveness	215	52.4
8. High motivation to work	162	39.5

The majority of respondent chief pharmacists' requirements for a young specialist were: working experience, higher education and recommendations. About one third part of respondent's requirements and demands for a young specialist were proximity of place of residence to working place, marital status, plan for career development and high motivation to work (See tabl.8). We concluded that higher pharmaceutical education was necessary precondition to start work on the pharmacist position. As it found pharmacist should have attentiveness, ability to learn, ability to work in a team, purposefulness, kindness and politeness, high motivation to work [75-76].

Table 8. The respondents' requirements for a young specialist.

Q-5. The requirements demanded from a young specialist (several answers were acceptable)	Count	Percent %
1. Working experience	218	53.2
2. Proximity of place of residence to working place	131	32.0
3. Marital status	131	32.0
4. Children	76	18.5
5. Higher pharmaceutical education	240	58.5
6. Recommendations	209	51.0
7. Plan for career development	141	34.4
8. High motivation to work	131	32.0

The majority of respondent chief pharmacists considered that necessary time period for adaptation of a young specialist ranged from 9 months till up to 1 year (See fig.13).
The majority of chief pharmacists considered that the mostly essential difficulties in professional adaptation of young employees were lack of professional knowledge and also of special skills (computer skills and etc) [77-78].

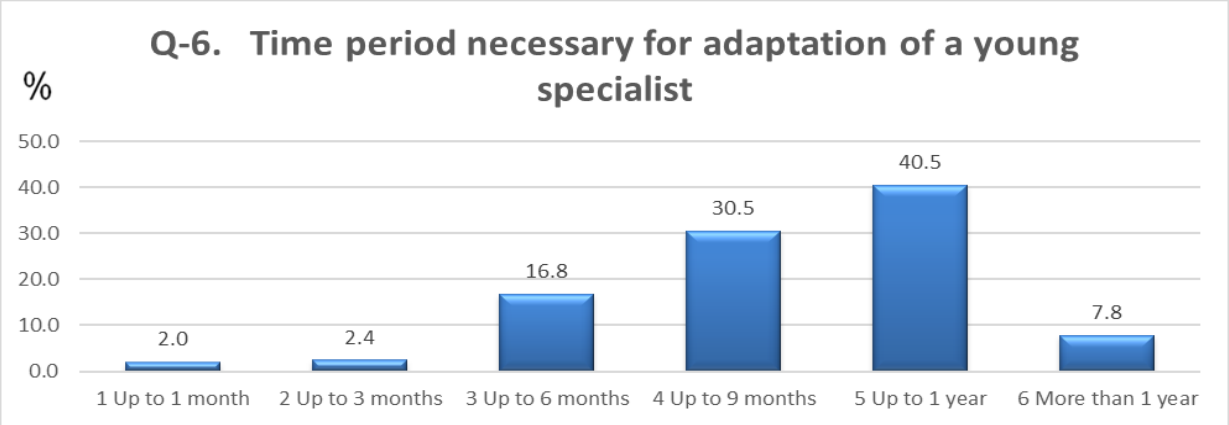

Figure 13. The respondents' opinion about the time period necessary for adaptation of a young specialist.

Less than half part of respondents considered that the mostly essential difficulties in professional adaptation of young employees were difficulties with adaptation within the colleagues' team, difficulties in relationship with administration (leadership), non-compliance of a job with own ideas (See tabl.9). According to that university pharmacy program should be more orientated to special skills, which gives possibility and capability to pharmacists to use gained professional knowledge in practical situation.

Table 9. The respondents' opinion about the mostly essential difficulties in professional adaptation of young employees

Q-7. The most essential difficulties in professional adaptation of young employees (several answers were acceptable)	Count	Percent %
1. Lack of professional knowledge	250	61.0
2. Lack of computer skills or other special skills/ certain peculiar specific skills	271	66.1
3. Difficulty with adaptation in to collective (within the colleagues team)	139	33.9
4. Difficulties in relationship with administration (leadership)	196	47.8
5. Non-compliance of a job with own ideas	164	40.0
6. Having excessive ambitions	90	22.0

The chief pharmacists' majority considered that most effective forms of professional assistance while adaptating of the specialist to work were independent practical activity and personal conversation. Less than half part of respondents considered that most effective forms of professional assistance while adapting of the specialist were discussion on work of young employees within the colleagues' team and on special training programs. About one third each of them considered necessary to work with a mentor, internship and qualification upgrading courses (See tabl.10).

Table 10. The respondents' opinion about the most effective forms of professional assistance while adaptation of the specialist

Q-8. The most effective forms of professional assistance while adaptation of the specialist (several answers were possible)	Count	Percent %
1. Independent practical activity	262	63.9
2. Working with a mentor	142	34.6
3. Internship	137	33.4
4. Discussion of work of young employees within the colleagues team	196	47.8
5. Personal conversation	293	71.5
6. Qualification improvement upgrading courses	120	29.3
7. Special training programs	169	41.2

During research there were found and evaluated the chief pharmacists' factors having an influence on the professional development of young specialists. These factors were: interesting and valuable work, the favorable psychological climate within the team of colleagues, possibility of career development, social importance of profession, and independence in work, professional education, professional trainings (See tabl.11).

Table 11. Report about the respondents' opinion regarding the professional development of young specialists.

Q-9.The directions of acting by chief pharmacists for professional development of young specialists (each factor was evaluated by 5-point system)	Mean	Median	Std. Deviation
q9_1 Interesting and valuable work	4.64	5.00	0.813
q9_2 The favorable psychological climate within the team of colleagues	4.38	4.50	0.732
q9_3 Possibility of career development	4.13	4.00	1.024
q9_4 Social importance of profession	4.10	4.00	1.028
q9_5 Independence in work	3.76	4.00	1.186
q9_6 Professional education or professional trainings	4.25	5.00	0.956

Less than half part of the respondents considered that the level of basic training of pharmacists was not corresponding to the contemporary requirements (See fig.14). According to the sociological study results of the public care specialists it is obviously, that all pharmacists should have higher pharmaceutical education from the state recognized and accredited higher education institutions and universities. Pharmacists' specialty should become a regulated health care profession. According to that Government should make certification, licensing and accreditation of pharmacist professionals.

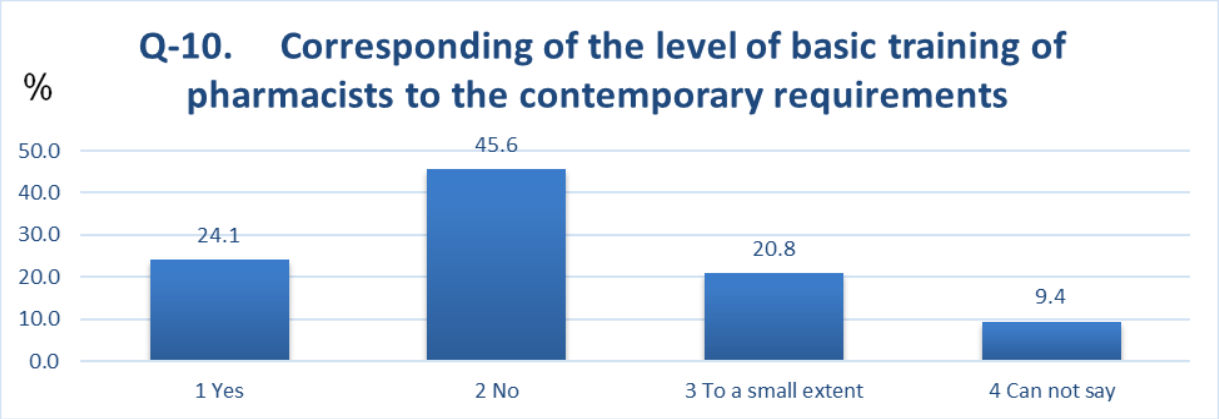

Figure 14. The respondents' opinion about pharmacists' basic training level correspondence to the contemporary requirements

The respondents' vast majority considered that the issues to for pharmacists were in need of the further regular studies or trainings in the following fields: new medications, issues of pharmacotherapy of certain diseases, pharmacology and pharmacotherapy, drugs toxicity (See tabl.12). From the study results it is obvious that in the higher pharmaceutical institutions' pharmaceutical educational programs and curriculum need upgrade, renewal, modernization and adaptation to the new modern medical challenges. Therefore, continuous pharmaceutical educational programs should be created. These programs should be more focused on new medications, pharmacotherapy, drugs toxicity and dosage, routes of drug administration, selection of OTC drugs, cost-effectiveness and cost-benefits of drugs.

Table 12. The respondents' (public health specialists) opinions about the issues for pharmacists necessary for the further regular studies or trainings

Q-11. The issues for pharmacists necessary for the further regular studies or trainings (several answers were possible)	Count	Percent %
1. New drugs	187	60.9
2. Psychology of communication with customers	103	33.6
3. Issues of pharmacotherapy of certain diseases	197	64.2
4. Safety and effectiveness of drugs	154	50.2
5. Pharmacology and pharmacotherapy	224	73.0
6. Normative legal regulation of pharmaceutical activity	94	30.6
7. Drugs toxicity	164	53.4
8. Drugs dosage	112	36.5
9. Routes of drug administration	110	35.8
10. Drug forms	61	19.9
11. Drug design	43	14.0
12. Rules of drug administration	123	40.1
13. Drugs generic, chemical and brand names	57	18.6
14. Selection of OTC drugs	108	35.2

15. Cost-effectiveness and cost-benefits of drugs	96	31.3

Approximately half part of the respondents was not familiar to the concept of pharmaceutical care; while more than a quarter of the public health specialists were well familiar to the concept of pharmaceutical care (See fig.15).

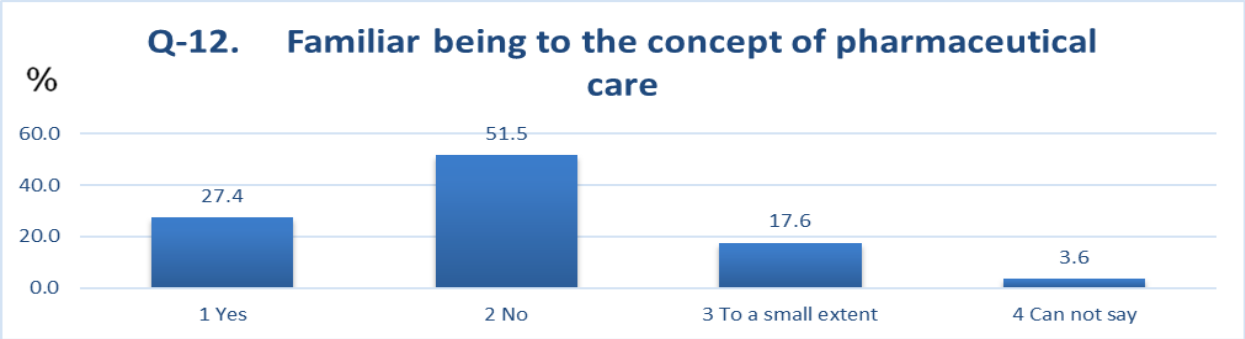

Figure 15. The respondents' (public health specialists) cognition of the concept of pharmaceutical care.

The respondents' large majority considered necessity of provision of cooperation between pharmacists and physicians on the issues of pharmacotherapy (See fig.16). The pharmacist must provide information to doctor about new drugs pharmacotherapy, the generic replacement drugs, the cost-effectiveness and cost-benefits of drugs, drugs' generic, chemical and brand names. In our opinion and vision cooperation between pharmacists and physicians on the issues of pharmacotherapy is positively reflected on patients' health and has great importance for provision higher quality health care service for patients' safety.

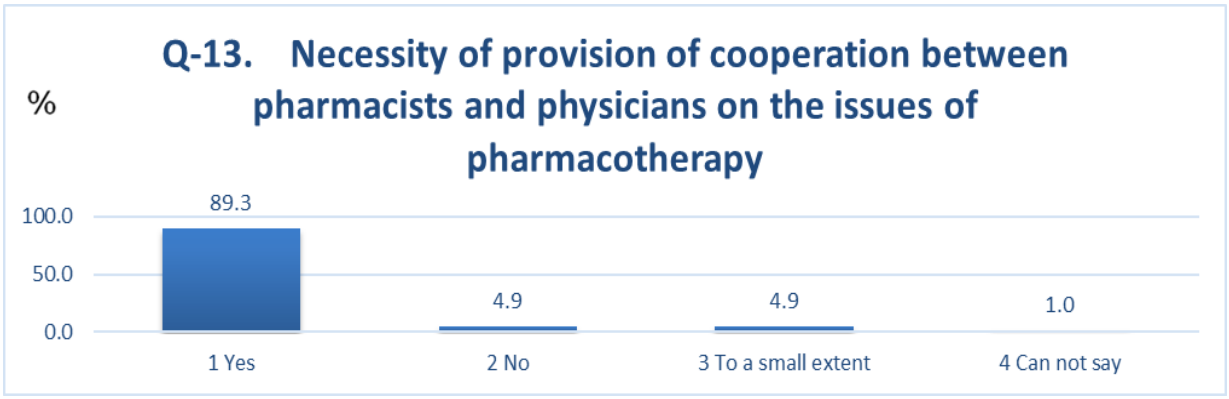

Figure 16. The respondents' opinion about the necessity to provide cooperation between pharmacists and physicians on the issues of pharmacotherapy.

More than half part of the respondents considered that pharmacist is not in charge of treatment as a physician, meanwhile about a quarter of the public health specialists considered a pharmacist to be in charge of that (See fig.17). Properly educated pharmacist can minimize and reduce the

mistakes made by a doctor in the recipe. That has a great importance and value for provision higher quality health care service for patients' safety.

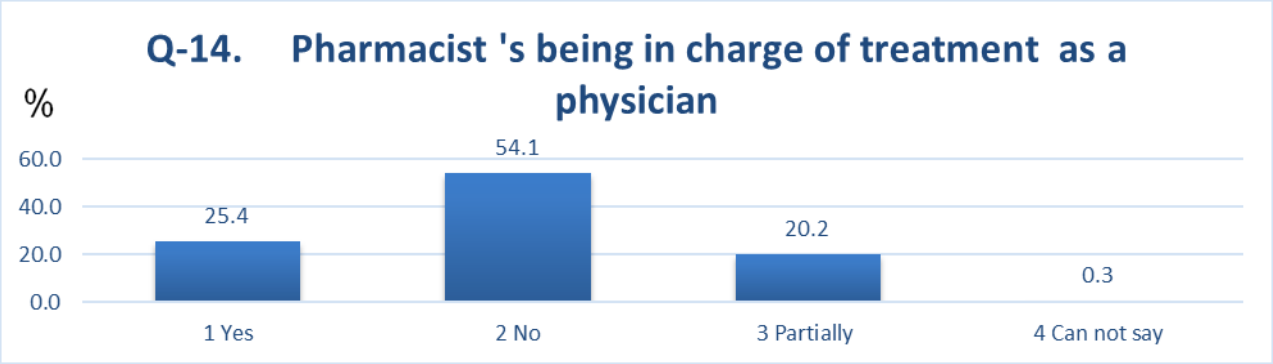

Figure 17. The respondents' (public health specialists) opinion about pharmacist's being in charge of treatment as a physician

Conclusion

A clinical pharmacist is in no way a competitor of a doctor, on the contrary, he must refer patients who need qualified medical care to a doctor. It is difficult to imagine that a pharmacist does not know the alphabet of medicine and does not have relevant knowledge of the main clinical syndromes. Must have a particularly good knowledge of the nomenclature of medicines (mainly over-the-counter medicines). In essence, a clinical pharmacist must provide a defined pharmaceutical supply and make a decision about the dispensing of the drug. The respondents' vast majority considered that pharmacist should provide assistance in teaching patients to understand the prescribed drugs intake rules. According to that higher quality pharmaceutical service could be only provided by the pharmacists of higher pharmaceutical education, graduated from the authorized, accredited and licensed by the state higher education institutes and universities.

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ADVERSE CHILDHOOD EXPERIENCES AMONG DEINITIALIZATION CHILDREN FROM FOSTER CARE

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ABSTRACT

Despite compelling evidence suggesting that foster children are disproportionately exposed to adverse childhood experiences (ACEs), comparatively little research has focused on this vulnerable population of young children. In this research, we evaluate the association between foster care placement and exposure to a variety of ACEs using data from the 2019-2022 Survey of Children's Health, a representative sample of non-institutionalized children aged 0-17 in Azerbaijan. Compared to their peers, children who are adopted from or placed in foster care are more likely to experience parental divorce or separation, parental death, parental incarceration, parental abuse, exposure to violence, household member mental illness, and household member substance abuse. This finding comes from adjusted logistic regression models.

Introduction

In Azerbaijan, placement in foster care is common; estimates indicate that 8% of children will do so. Between the time of their birth and their 18th birthday, this incident may occur. The risks of being placed in foster care vary depending on the population, with the most vulnerable groups, such as children of color or from low-income families, having the highest risks. For instance, in the other established democracies for which estimates have been made, the overall risks of placement in foster care are lower. For instance, the cumulative risks of placement in foster care are non-negligible but approximately one-quarter to one-half in Australia (O'Donnell et al., 2016), Canada (O'Donnell et al., 2016), Denmark (Fallesen, Emanuel, & Wildeman, 2014; Ubbesen, Gilbert, & Thoburn, 2015), and England (Ubbesen et al., 2015).

The foster care system deserves attention because, as many researchers and policymakers have noted, a significant number of children will ever experience this event, it is more common among children from historically disadvantaged family groups, and children in foster care disproportionately experience poor mental and physical health. For instance, recent research on children reveals that children placed in foster care were three to five times more likely to experience mental health conditions like depression, anxiety, behavioral or conduct issues, and Attention Deficit/Hyperactivity Disorder than children not placed in foster care, net of a variety of demographic and socioeconomic characteristics (Turney & Wildeman, 2016). These results are mostly in line with an earlier phase of study on youngsters.

These results are mostly in line with an earlier wave of studies that showed foster children to have severely poor mental and physical health in comparison to other kids.There are obviously a lot of additional risk factors that could possibly be causing the poor results of children in foster care, even though the extent to which foster care placement contributes to these poor mental and physical health outcomes is widely contested (e.g., English, Thompson, & White, 2015).

According to Taylor, Guterman, Lee, and Rathouz (2009), children who are ever placed in foster care are more likely than their peers to experience family instability, be exposed to socioeconomic hardship, and reside in underprivileged areas (e.g., A2015; see also reviews by Gilbert, Widom et

al. These results are mostly in line with an earlier wave of studies that showed foster children to have severely poor mental and physical health in comparison to other kids. Exposure to the seven ACEs characteristics that are closely associated with poor child health and wellbeing and placement in foster care throughout the course of life. We offer two different kinds of comparisons in particular. After accounting for a variety of confounders, we first contrast children who have been placed in or adopted from foster care with those who have not. Second, we compare children who have experienced foster care (those who have been placed in or adopted from foster care) to kids who are less disadvantaged socioeconomically (such as kids from families whose earnings are below the poverty line).

Method

Participants. In order to calculate the relationship between children's exposure to adverse childhood experiences (ACEs) and placement in foster care, we used the cross-sectional 2019–2022 study of Children, which included 177 representative children in Azerbaijan. Prior to conducting interviews between February 2019 and June 2022, study researchers first identified households using list-assisted random-digit dialing, stratifying by state and telephone type (cell phone or landline). Interviewers in each household chose a focal child and spoke with the adult who knew the most about that child (in 69% of observations, the child's biological/step/foster/adoptive mother, biological/step/foster/adoptive father, and another household member, respectively; hereinafter referred to as the parent respondent). For the landline sample and the cell phone sample, respectively, the survey completion rate was 54% and 41%. Weights for sampling account for non-response. Due to the size of the sample and the data gathered regarding the living situations of the children, the study focused on foster children, a population that is challenging to reach.

Measurements. Outcome factors According to the parent respondent, the outcome variables contain two composite indicators and seven specific markers of children's development. The specific indications are listed below: (1) parental divorce or separation, which indicates that the child ever lived with a parent or guardian who got divorced or separated after the child was born; (2) parental death, which indicates that the child ever lived with a parent or guardian who passed away; (3) parental incarceration, which indicates that the child ever lived with a parent or guardian who served time in jail or prison after the child was born; and (4) parental abuse, which indicates that the child ever witnessed or heard any parents, guardians, or Other adults in his or her home slap, hit, kick, punch, or beat each other up; (5) violence exposure; the child was ever the target of violence or witnessed any violence in the neighborhood; (6) household member mental illness; the child ever lived with someone who was mentally ill, suicidal, or severely depressed for more than a couple of weeks; and (7) household member substance abuse; the child ever lived with someone who had a problem with drugs. A binary variable in the first composite indication indicates that the child was exposed to at least one ACE, and a count variable in the second composite indicator indicates how many ACEs the child experienced. It's significant because if parent respondents state they don't know Children are regarded as not having experienced the event if they were exposed to an ACE. Since that foster parents might not be aware of ACE exposure prior to placement, it is hypothesized that underreporting is more prevalent among children put in foster care. If children with uncertain ACE exposure were instead excluded from the studies, the results were substantially comparable.

Analysis 2.3. For each of the two groups—children placed in or adopted from foster care and children neither placed in nor adopted from foster care—we first provide the frequencies of the dependent variables. Chi-square tests are used to determine the statistical significance of these ACE group differences.In Model 1, the bivariate association is shown. Model 2 accounts for the exogenous child traits mentioned above, and we believe that this model provides an upper bound on the relationship between being placed in foster care and developing ACEs. Both child and household factors are taken into account in Model 3. This final model includes household variables that are assessed following exposure to both foster care and ACEs, thus we consider it to give a lower-bound, or cautious, an estimate of the relationship between placement in foster care and certain household characteristics. Therefore, we consider this model to give a lower-bound, or conservative, estimate of the association between foster care placement and ACEs. This is because the final model contains home factors that are examined after both exposures to foster care and ACEs. Consideration of children across these three criteria guarantees that we study a range of socioeconomic conditions. The poverty line is frequently employed as a threshold for determining eligibility for public assistance. Finally, we compare kids in foster care to kids in the eight different types of household living arrangements listed below, using models to assess ACEs: There are eight different types of complicated families: (1) single mother, (2) single father, (3) only grandparents, (4) grandparents and parents, (5) only relatives, (6) relatives and parents, (7) non-relatives, and (8) other complex families. Lack of control variables 0% of observations (child age) to 8.1% of observations (family income below the poverty line) We averaged the outcomes across five data sets and used multiple imputations to maintain these observations in the multivariate normal technique. Spss21 was used to conduct all analyses. The Institutional Review Boards (IRBs) at the Azerbaijan Psychiatry Association (APA) determined that this study was exempt from using human subjects in research.

Results Sample description

Here, we discuss the descriptive statistics following imputation. The descriptive statistics were largely identical before and after imputation.

1.4% of the sample's children had experience with foster care, including 0.5% of those who were already in foster care at the time of the survey and 0.9% of those who were legally adopted from foster care (descriptive data not shown). The proportion of kids in foster care is in line with predictions made from other statistics. Moreover, some descriptive statistics match expectations. Children were 8.6 years old on average. The majority of children—48.7%—were female. The most frequent event for children in the sample was separation (19.9%), which was followed by parental abuse (7.2%), household member substance abuse (7.5%), exposure to violence (8.6%), household member mental illness (8.5%), household member abuse (7.2%), parental incarceration (6.9%), and parental death (3.0%). A third of kids (33.8%) on average were exposed to at least one ACE. Study shows weighted ACEs frequencies by exposure to foster care as well, supporting two conclusions. First off, ACEs were a common exposure for kids in foster care. For instance, more than half (53.8%) of children in foster care encountered substance misuse by family members. Parental incarceration (40.1%), parental divorce or separation (45.4%), parental abuse (34.2%), mental illness in the home (33.7%), and exposure to violence (31.1%) were all rather common. 75.5 percent or more of kids who were exposed to There was at least one ACE in foster care. Also, these kids had 2.5 ACEs on average.

Second, children in foster care were more likely to experience parental divorce or separation (45.4% vs. 19.6%, p 0.001), parental death (11.5% vs. 2.8%, p 0.001), parental incarceration (40.1% compared to 6.4%, p 0.001), parental abuse (34.2% vs. 6.9%, p 0.001), exposure to violence (31.1% vs. 8.2%, p 0.001), household member mental These were also combined in order to analyze ACE exposure among both foster children and non-foster children, using seven specific indicators and two composite indicators.

Discussion

Together, our findings use a nationally representative data source to investigate ACE exposure (using seven individual indicators and two composite indicators) in both a descriptive and covariate-adjusted manner for both foster children and non-foster children. As a result, we add to the body of knowledge in this field by shedding light on the variables that may act as mediators between the placement of a child in foster care and their health (Gilbert, Kemp et al., 2009; Turney & Wildeman, 2016; Wildeman & Waldfogel, 2014). English et al. (2015), Freisthler (2004), Garbarino & Sherman (1998), Gilbert, Widom et al. (2013), Cancian et al. (2013), Coulton et al. (1999), Andersen (2010), Berger et al. (2019), Cancian et al. (2013), Drake & Pandey (2006), English et al. (2015), English et al. (2015), English et al. (2015), This study builds on previous studies (Taylor et al., 2009; Kruttschnitt et al., 1994; Taylor et al., 2009) by offering precise ACE estimates. By utilizing a nationally representative sample and controlling for a wide range of confounders, this piece furthers previous research by demonstrating the existence of the association between foster care and ACEs even when these variables are taken into account. The results imply that being placed in foster care is a special risk factor for being exposed to a variety of potentially traumatic experiences that impair child health.

5. Recommendations. Despite its limitations, this paper shows the vulnerability of children in foster care by highlighting the risk factors for poor health that children in foster care confront in a representative sample. Our studies shed light on how ACE exposure in foster children relates to ACE exposure in other historically underprivileged groups of kids. In doing so, this article highlights the necessity of developing two treatments that support this vulnerable group, which we end with encouraging foster parents to seek out mental health services, including counseling and therapy, to address their own emotional and psychological needs. Provide resources and support groups for foster parents to connect with other caregivers and share their experiences and challenges. Educate foster parents on trauma-informed care and the impact of adverse childhood experiences on children's mental health. Offer training and workshops on effective communication, stress management, and conflict resolution to foster parents to improve their ability to handle difficult situations. Promote self-care practices for foster parents, such as exercise, meditation, and mindfulness, to improve their overall well-being and reduce stress levels. First and foremost, significant funding should be set aside to assist foster children in coping with the stresses they encountered before entering foster care. Second, foster parents should be made aware of the hardships these kids endured, in addition to any probable abuse and neglect. contributed to their being placed in foster care; as a result, they are better equipped to handle both the mistreatment and difficulties.

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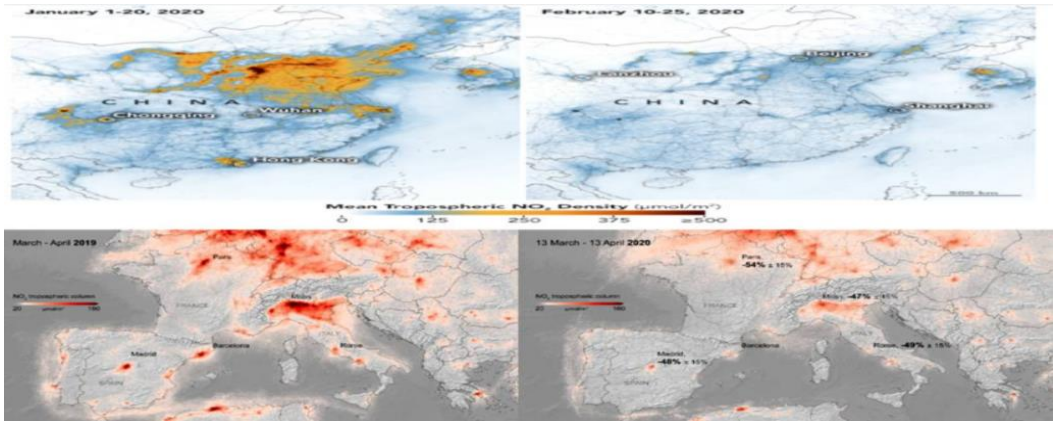

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