

# European journal of volunteering and community-based projects

Vol.1, No 1; 2022

ISSN: 2724-0592

E-ISSN: 2724-1947



sponsored by



Organizzazione Italiana  
Sviluppo Innovativo

Journal of  
Odv Casa Arcobaleno  
Iscritta Registro Terzo Settore della Regione Piemonte  
C.F. 94570230014

Publication: 31 March 2022

Data di pubblicazione: 31 Marzo 2022

## **Place of publication: Torino (Italy)**

### **About the journal**

The journal aims to address issues related to the third sector and community-based activities. The magazine therefore has the aim of spreading the culture of the third sector (voluntary organizations, social promotion associations, philanthropic bodies, social enterprises, mute aid companies, recognized and non-recognized associations, ecclesiastical bodies), the topics of interest are:

Social services

Health interventions and services

Education, health education and training

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University and post-university education

Organization and management of cultural, artistic or recreational activities of social interest

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Tourist activities of social, cultural or religious interest

Extra-curricular training, aimed at preventing early school leaving and at school and training success, at preventing bullying and combating educational poverty

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commercial, production, education and information, promotion, representation, licensing of certification marks, carried out within or in favour of fair-trade chains

Services aimed at introducing or reintegrating workers and disadvantaged people into the labour market

Social housing

Humanitarian Reception

Social agriculture

Organization and management of amateur sports activities

Charity, distance support, free food supply

Promotion of the culture of legality, peace between peoples, nonviolence and unarmed defence

Promotion and protection of human, civil, social and political rights, as well as the rights of consumers and users of activities of general interest

Civil protection

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The journal also welcomes contributions on medical activities or groups of citizens that have an impact on general well-being.

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## **Il volontariato nel 2022 quali orientamenti di ricerca**

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**Doi: 10.5281/zenodo.6465082**

La maggior parte delle Associazioni aderenti al Terzo Settore e in particolare quelle di volontariato si trovano nei primi mesi dell'anno a definire in prospettiva le attività che dovranno svolgere nel corso del 2022. Mai come questo anno, in seguito alla riforma del Terzo Settore introdotta con il D.Lgs. 117/2017 e le diverse richieste di adeguamento statutario, susseguite nel tempo, ci si trova davanti a Enti orientati a interessi generali che devono supplire e supportare gli interessi generali dello Stato (Chiampì, 2020; Iannaci, D., & Aiassa, A. (2020). Infatti, l'avvio e il funzionamento del registro unico nazionale del Terzo Settore (Runts) sta portando la maggior parte delle organizzazioni di volontariato (Odv), associazioni di promozione sociale (Aps) e Onlus iscritte nei rispettivi registri ad adeguare il proprio statuto approfittando della finestra temporale aperta fino al 31 maggio 2022, termine di certo non tassativo ma che si riferisce soltanto alla possibilità per tali enti di modificare lo statuto utilizzando le procedure e le maggioranze dell'assemblea ordinaria. Ma come sappiamo le attività di volontariato possono essere svolte sia da organizzazioni stabili che da gruppo di soggetti uniti in attività di community-based orientata al volontariato (Brescia, 2021). Ci si pone quindi il dubbio su quali siano queste attività in un contesto condizionato dal COVID (Biancuzzi et al., 2021), da Nuove Guerre e da sistemi economici in continua evoluzione (Biancone, Brescia, & Jafari-Sadeghi, 2021) che coinvolgono a volte il terzo settore in processi di coprogettazione tra pubblico e terzo settore verso quello che è definito dalla storia il benessere comune e il bene comune (Coronella et al., 2020). Dal nuovo anno inizia a essere presente un processo di spinta verso la co-progettazione realizzato ai sensi della legge 241/1990 ma realizzabile del tutto dalla deliberazione delle linee guida approvate con il D.M. 72 del 31/3/2021 che costituiscono una traccia per applicare tale norma ad un procedimento di amministrazione condivisa. In questo tumulto evolutivo per terzo settore e volontariato si ha quindi la necessità di identificare temi, orientamenti e elementi che non può definire da sola l'accademia italiana e internazionale. Se i portatori d'interesse rimangono la bussola in questo mare magnum di bisogni e necessità a cui rispondere (Marshall & Woodward, 2004; Fletcher et al., 2003), servono nuovi strumenti per identificarli e guidare anche il terzo settore e studiosi come già avvenuto per organizzazioni ben più complesse (Grossi et al., 2021). Quali dovrebbero essere identificate le attività più discusse, i temi e le ricadute e gli impatti (Esposito et al. 2021) su cui devono indagare i ricercatori nel 2022?

Dalla domanda all'analisi

Come nei processi di rendicontazione sociale e di valutazione dei bisogni informativi previsti dalla matrice di materialità (GRI 101:2016) siamo davanti a un gap informativo che coinvolga l'intero contesto. A tal fine può essere adottato un processo di sensitive analysis che attraverso i social media esistenti e applicativi dedicati vada a sondare il web alla ricerca di risposte. Tali risposte non riguardano solo temi e attori ma anche il modo in cui le informazioni vengono comunicate che

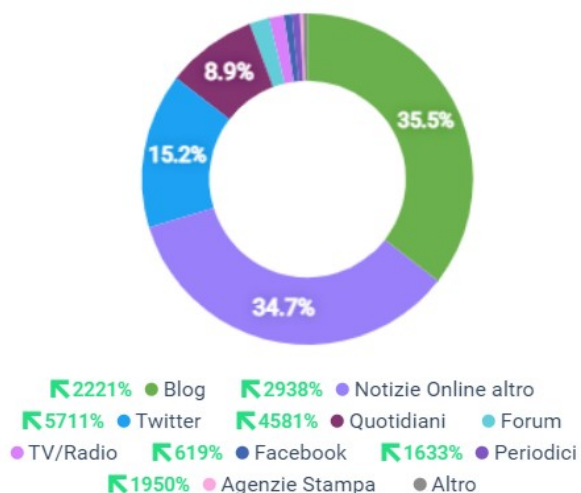
influenza la percezione del lettore e il coinvolgimento dei portatori di interesse che dipende dal modo in cui le informazioni vengono condivise in uno scambio tra portatori d'interesse e organizzazioni o gruppi di volontariato (Chong e Druckman 2007). Bellucci e Manetti (2017) hanno già dimostrato che i social media possono essere utilizzati per influenzare le scelte manageriali nelle organizzazioni senza scopo di lucro e per percepire l'opinione e il coinvolgimento su argomenti specifici, coinvolgendo le parti interessate nell'arena sociale di confronto. Ma all'inverso tali informazioni possono influenzare e creare trend di ricerca e allocare l'attuale azione degli attori. I social media espressivi consentono alle persone di esprimersi condividendo con altri testi, immagini, video e musica. Facebook, MySpace, Twitter, Youtube, Flickr e Four-square rientrano in questa categoria di social media. Ai social media espressivi utilizzati si aggiungono i social media collaborativi, che consentono alle persone di lavorare insieme per raggiungere obiettivi comuni attraverso processi interattivi e sociali. Wiki e Google Docs sono ottimi esempi di questo tipo di social media (Lee e Kwak 2012). Proprio per via della loro crescente diffusione, i social media sono divenuti un oggetto di analisi per comprendere le opinioni delle persone e i bisogni delle persone su determinati aspetti e temi, ma anche su cosa ne pensano di un prodotto o servizio. L'analisi di queste tematiche, in ambito accademico e non solo, prende il nome come abbiamo detto di sentiment analysis. La sentiment analysis, detta anche opinion mining, è il campo di studio che analizza le opinioni, i sentimenti, le valutazioni, le attitudini e le emozioni delle persone verso entità e i loro attributi espressi in un testo scritto (Liu 2015). La sentiment analysis è strettamente legata al concetto di opinion mining, un termine per indicare una tecnica in grado di elaborare una ricerca su parole chiave e di identificare, per ciascun termine, degli attributi (positivo, neutro, negativo) tali per cui, una volta aggregate le distribuzioni di questi termini, diventa possibile estrarre l'opinione associata a ciascun termine chiave (Dave, Lawrence e Pennock 2003). Le tecniche di analisi più comunemente individuate rispetto alla sentiment analysis possono suddividersi in tre macrocategorie: rilevamento delle keyword, affinità lessicale e metodi statistici. Partendo dalla macrocategoria più semplice, il rilevamento delle keyword consente di classificare il testo tramite categorie emotive facilmente riconoscibili, individuate in base alla presenza di parole emotive non ambigue, come "felice", "triste" e "annoiato".

Il metodo dell'affinità lessicale invece, non rileva solo le keyword emotive, ma assegna anche a parole arbitrarie "un'affinità" probabile a emozioni particolari. Rispetto alla prima metodologia vista, l'affinità lessicale consente di affinare la selezione e l'attribuzione della polarità (positivo, neutro, o negativo). Infine, troviamo i metodi statistici che si basano su elementi di apprendimento automatico supervised (supervisionate) e unsupervised (non supervisionate) che eseguono la classificazione del sentimento basandosi sulle frequenze di co-occorrenza delle parole. (Hussain e Cambria 2018; Majumder et al. 2018).

### I temi rilevanti di inizio 2022

L'adozione della sentiment analysis sui primi tre mesi dell'anno ha permesso di identificare 14.200 risultati con 65.100 utenti coinvolti nei dibattiti generati dalle informazioni e 3.300 fonti uniche. I social media che hanno avuto maggior risalto sono i blog direttamente gestiti spesso dalle organizzazioni di volontariato e dalle Notizie Online. Twitter diversamente dalle aspettative costituisce il principale canale di scambio di informazioni e diffusione delle iniziative. Gli utenti registrati che maggiormente sono interessati al volontariato sono uomini per il 60,6% e donne per il 39,4%. Maggiore attenzione è data dal tema nella fascia di età tra i 25-34 anni per il 44,4%, tra i 18 e 24 anni per il 26,1%, per il 18% tra i 35 e i 44 anni e per il 10,2% tra i 45 e i 54 anni. Il dato dell'engagement e interesse è condizionato ovviamente dalla maggiore difficoltà e utilizzo dei social media da parte di soggetti che non sono nativi digitali o millennial (Secinaro et. 2021).

### RIPARTIZIONE PER TIPI DI MEDIA



Le parole chiave, il trend nel tempo e il sentiment associata costituiscono la traccia della nostra analisi e forniscono da un'analisi dei contenuti l'andamento principale.

### TOP THEMECLOUD

TIPI DI TEMA [★ Temi principali -](#)



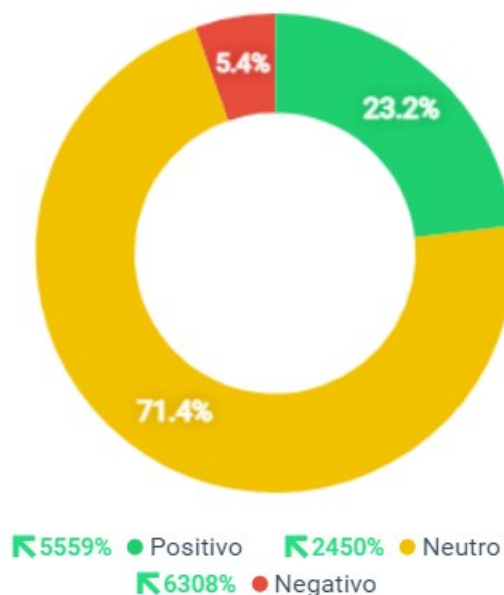
Il nostro tempo è condizionato dal contesto, sia le dichiarazioni del vaticano e del settore ecclesiastico contro la guerra che le analisi del costo dei profughi ucraini riconosciuti al giorno a diverse associazioni di volontariato (30 euro al giorno) che si occupano di protezione civile, diventano tema

di prioritario dibattito. I due temi sono prioritari nel nuovo anno seguiti dalla valorizzazione del numero di volontari ancora impegnati per prevenire e contrastare il COVID e gestire i disagi giovanili emergenti a seguito dei due anni pandemici. Questi i temi associati al termine volontariato. Le Associazioni si domandano sulla reale capacità del Presidente di gestire il nuovo flusso di immigrati ucraini che vede nel piano messo in atto 15 mila posti all'intero delle strutture di accoglienza per migranti già esistenti e 60 mila posti presso le famiglie disposte ad accogliere. È evidente come la gestione delle organizzazioni di volontariato, dell'impatto delle attività, delle risorse e delle attività di community-based svolte dalle famiglie acquisisca un connotato particolare che deve essere considerato e raccontato si spesa solo nel breve termine. I servizi diventano quindi un tema prioritario sia nel contesto nazionale che internazionale, temi principali l'erogazione da parte del terzo settore di servizi primari di accesso in sostituzione o integrazione al sistema sanitario (es. sistema diagnostico per HIV e altre patologie) in organizzazioni ove l'accesso su prenotazione ha generato un ostacolo stabile con la razionalizzazione delle diagnosi, assistenza psicologica resa maggiormente necessaria dai due anni passati, tutela legale di minoranze LGBTQ che ricevono violenza anche nel contesto familiare, servizi primari verso i profughi, tutela delle donne che ricevono violenza con l'apertura di nuovi centri in coprogettazione con il contesto regionale di riferimento e in contesto internazionale l'accesso all'acqua e alla creazione di corridoi umanitari non solo per la guerra in Ucraina ma per le altre guerre dimenticate attualmente in atto. Tra le iniziative messe in atto dalle associazioni di volontariato nel 2022 riguardando la gestione degli animali in città come il contenimento dei gatti randagi e l'individuazione di sistemazioni stabili (es. caso Legnano), l'assistenza verso soggetti fragili come il progetto di spesa solidale assistita per anziani non in grado di provvedere autonomamente con consegna a domicilio, le giornate della pace e della memoria, la sostenibilità ambientale che nel contesto nazionale acquisisce connotati particolari quali ad esempio l'attività svolta in collaborazione tra filiera del vino e associazioni per renderla sostenibile attraverso un utilizzo delle risorse (acqua, suolo, energia, rifiuti) limitato. L'ambiente è associato anche al tema della collaborazione tra pubblico e terzo settore nell'individuazione di piani comuni e di studi e buone pratiche per ridurre la desertificazione e l'eccessivo consumo di suolo. La collaborazione tra cittadino e istituzioni coinvolge il volontariato anche in iniziative di grandi dimensioni che non sarebbero realizzabili senza l'adesione dei residenti, tra queste la selezione e la ricerca di volontari per l'Eurovision che si terrà in Italia a Torino e che ha visto 12.000 domande e richieste di adesione. La ricaduta economica e del contesto colpisce anche le associazioni di volontariato che si occupano di trasporto socio-sanitario con una palese difficoltà di copertura dei costi del servizio legati all'aumento delle accise e dei costi della benzina. La carenza di risorse viene di fatto messa in risalto da diverse raccolte fondi messe in atto da associazioni di volontariato in particolare per sostenere le attività di accoglienza dei profughi.

I principali temi che creano disappunto negli utenti riguardano le richieste di nuovi fondi regionali a sostegno delle organizzazioni di volontariato e di coinvolgimento nella distribuzione di risorse fornite con il PNRR, la richiesta al governo di proroga dei tempi di invio delle graduatorie del bando volontari 2021 e delle date di avvio dei relativi Programmi di Intervento e l'invasione dell'Ucraina da parte della Russia. Ai sentimenti negativi si aggiungono quelli relativi alle misure insufficienti messe in atto per ridurre il rincaro carburante per i servizi di assistenza ai disabili e di emergenza 118 svolto dalle organizzazioni di volontariato. Percezione positiva verso le attività della protezione civile fortificata in questi anni di COVID, i volontari per l'Eurovision, le attività di tutela degli animali (es. associazioni che si prendono cura degli animali dei clochard), le attività di accoglienza delle associazioni di volontariato nei confronti dei profughi ucraini e le attività messe in campo di tutela degli anziani.



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# **Volunteering during the COVID-19 Pandemic: An Investigation of the Motivations, Benefits, Challenges, and Concerns**

## **Associated with Volunteering during a Global Health Crisis**

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**Abstract:** Since the beginning of the COVID-19 pandemic, there has been limited research on why people choose to volunteer or what the benefits and challenges of volunteering are, has been conducted in the context of the COVID-19 pandemic. This study aimed to investigate the motivations, benefits, challenges, and concerns associated with volunteering during the COVID-19 pandemic in Ireland. A cross-sectional design assessed the motivations, benefits, challenges, and concerns associated with volunteering during the COVID-19 pandemic. Purposive sampling was used, gathering 254 valid participants. Descriptive statistics, inferential statistics and content analysis were employed to analyse the data. Altruistic motivations, social benefits, and concerns about COVID-19 infection were among the most highly rated motivations, benefits, and concerns. Positive and negative aspects of volunteering during the COVID-19 pandemic were also identified. This study is

the first of its kind to explore motivations, benefits, and challenges associated with volunteering during the COVID-19 pandemic in Ireland.

**Keywords: COVID-19; volunteering; student volunteer; cross-sectional survey**

**Doi: 10.5281/zenodo.7339682**



## **1.Introduction**

The COVID-19 pandemic has caused unemployment rates to spiral. In Ireland, the national COVID-19 Pandemic Unemployment Payment had a total of 835,503 recipients between March 2020 and January 2021 (Central Statistics Office; CSO, 2021). This indicates that close to one million people were unemployed due to the pandemic at some point during this period. In addition to the loss of jobs, lockdown restrictions meant that many people faced disruption to their daily routines. While rates of unemployment have increased since the beginning of the pandemic, so too have the number of volunteers in Ireland. A recent report from Volunteer Ireland states that over 20,000 people registered on Ireland's volunteering database I-VOL, in response to the COVID-19 pandemic (Volunteer Ireland, 2020). The coinciding increase in the number of unemployed people and increase in the number of volunteers may be explained by suggestions in the literature that volunteering can provide an opportunity to replace work roles (Black & Living, 2004; Omoto, Snyder & Martino, 2000), and may bring a sense of structure into people's lives where routine has been disrupted (Bradley, 1999; Kirby, 2016). Although this may explain one potential motivation to volunteer, other volunteering motives in the context of previous pandemics have been identified in the literature. Studies by Akintola (2010), Kironde and Klaasen (2002), and Kpanake et al. (2019) highlighted that people were motivated to volunteer during the HIV/AIDS, tuberculosis (TB) and Ebola pandemics, to help those in need in their communities, to learn more about specific diseases, and to be with friends. Some studies have also researched people's willingness to volunteer during a pandemic (Shi et al., 2018; Yonge et al., 2010). However, depending on the circumstances of the pandemic and risks to the volunteers, the number of actual volunteers may not equate to the number of willing volunteers (Rosychuk et al., 2008); i.e., someone who states they would be willing to volunteer if there was a pandemic, is not guaranteed to translate this willingness into action.

The most commonly reported motivation to volunteer during a pandemic was personal development. The main areas of personal development that were discussed were participants' desire to learn more about specific diseases (Akintola, 2010; Reeder et al., 2001; Simon, Stürmer & Steffens, 2000; Stewart & Weinstein, 1997; Thomas et al., 2007; Topp et al., 2015; Brescia, 2020), their hope to develop clinical and professional skills through their volunteering experience (AlOmar et al., 2021; Gabard, 1995; Herrick & Brooks, 2019; Kpanake et al., 2019; Lopez, Glick & Berthold, 1998; Reeder et al., 2001; Simon, Stürmer & Steffens, 2000; Stewart & Weinstein, 1997), and to improve their employability prospects (Akintola, 2010; AlOmar et al., 2021; Kironde & Klaasen, 2002; Shi et al., 2021; Tempski et al., 2020; Topp et al., 2015). There are also altruistic motivators described in previous research – e.g. volunteers in various TB and HIV/AIDS organisations emphasised their desire to help other people (Kironde & Klaasen, 2002; Simon, Stürmer & Steffens, 2000), particularly those who are sick (Akintola, 2010), to give back to others (Topp et al., 2015) and to make a difference in someone's life (Christensen et al., 1999). A sense of moral responsibility to help those in need was deemed the most important motivation by Ebola volunteers in Guinea and AIDS volunteers in the USA (Kpanake et al., 2019; Stewart & Weinstein, 1997). Similar feelings of obligation to help those in need were also discussed by HIV/AIDS volunteers in Germany (Simon, Stürmer & Steffens, 2000), while feelings of moral and professional responsibility to help others were reported by medical students volunteering during the COVID-19 pandemic (Tempski et al., 2020).

Research over the years has shown that volunteering also has many benefits including mental and physical health benefits (Fegan & Cook, 2012; Yeung, Zhang & Kim, 2017), increased life satisfaction and well-being (Piliavin & Siegl, 2007; Russell et al., 2018; Thoits & Hewitt, 2001), and even a decreased risk of depression and mortality (Anderson et al., 2014; Kim & Pai, 2009; Okun, Yeung & Brown, 2013). However, while volunteering has its benefits, it can also come at a cost to those who offer their time and services (Handy & Mook, 2010; MacNeela, 2008).

There are risks, challenges, and concerns associated with volunteering, particularly when this volunteering is carried out during a global health crisis. Participants in studies by Gershon et al. (2016) and Thomas et al. (2007) highlighted the risks of becoming infected with Ebola and TB, as a result of volunteering during pandemic circumstances. Concern for the well-being of volunteers and lack of support from family members due to HIV or TB-related stigma was also a challenge for several volunteers (Christensen et al., 1999; Kangethe, 2010; Lopez, Glick & Berthold, 1998; Thomas et al., 2007). In some cases, volunteers were advised by family members not to put themselves at risk by volunteering (Thomas et al., 2007).

Although the motivations, benefits and challenges of volunteering have been researched in the past, little research on volunteering has been carried out in the context of the COVID-19 pandemic. New research is beginning to emerge on the topic of volunteering during the COVID-19 pandemic, and studies have been published on the experiences of medical student volunteers in Poland, China, Saudi Arabia, and Brazil (AlOmar et al., 2021; Bazan, Nowicki & Rzymiski, 2021; Chawłowska et al., 2021; Shi et al., 2021; Tempski et al., 2020), on the impact of virtual volunteering during the COVID-19 pandemic (Lachance, 2020; Trautwein et al., 2020). Findings from these studies show that 7-22% of medical volunteers in Poland had insufficient access to personal protective equipment (PPE), putting their health and safety at risk (Bazan, Nowicki & Rzymiski, 2021; Chawłowska et al., 2021). Professional development was a common motivation to volunteer reported by medical students in studies by AlOmar et al. (2021), Shi et al. (2021), and Tempski et al. (2020). Studies focused on virtual volunteering found that volunteering online, enabled people to engage in a meaningful leisure activity (Lachance, 2020) and that online volunteer platforms were effective in recruiting volunteers during the COVID-19 pandemic (Trautwein et al., 2020).

Despite the recent advances in the novel area of COVID-19 volunteering, research has yet to be carried out on the implications of volunteering during a pandemic in an Irish context. Therefore,

this study aimed to provide insight into people's motivation to volunteer in Ireland during the COVID-19 pandemic and to investigate the benefits, challenges and concerns that were associated with volunteering during the COVID-19 pandemic. This study also looked at whether the loss of structure in people's lives was a motivator to help out during the COVID-19 crisis in Ireland and whether volunteering had a positive impact on people's structure and routines, which were disrupted for many during this period. The primary aim of this study was to explore people's motivation to volunteer during the COVID-19 pandemic. The secondary aims were to explore the benefits, challenges, concerns associated with volunteering.

## **2.Methodology**

### ***2.1Research Design***

This study employed a quantitative, cross-sectional design allowing the researcher to gather information efficiently from a large cohort of people (O'Cathain & Thomas, 2004). This design is also used to quantify the attitudes and opinions of a certain population (Sukamolson, 2007). Although cross-sectional studies cannot determine causal relationships between datasets (Van der Stede, 2014), this type of research design was deemed most appropriate, based on the aims of the study.

Ethical approval for the research was granted by CMNHS Research Ethics Committee at the University of Galway.

### ***2.2 Measurement Device/Instrumentation***

A researcher-developed, cross-sectional survey was used to collect data. No instrument that assesses the motivations, benefits and challenges of pandemic volunteering was identified. The survey was developed based on the findings of the literature review to increase its content validity (Rattray & Jones, 2007). The survey consisted of four main sections: 1) demographic and background data, 2) people's motivation to volunteer during the COVID-19

pandemic, 3) the self-perceived benefits of volunteering during the COVID-19 pandemic, and 4) the challenges and concerns associated with volunteering during this time. Closed-ended questions can reduce the depth of responses in surveys (Rattray & Jones, 2007). Thus, one open-ended ‘any additional comments’ question was placed at the end of the survey to enhance the data gathered from the closed-ended questions and to allow participants to provide richer, more in-depth responses (LaDonna, Taylor & Lingard, 2018; O’Cathain & Thomas, 2004; Smyth et al., 2009).

A pilot of the survey was completed to determine the clarity of the questions, to highlight any issues with the design, to estimate the completion time, and to allow pilot participants the opportunity to provide constructive feedback and comments, as recommended in the literature (Hassan, Schattner & Mazza, 2006; Tsang, Royse & Terkawi, 2017). Ten participants who had volunteered during the COVID-19 pandemic, completed the pilot survey. This ensured that participants were familiar with the topic of volunteering and that the pilot sample was similar to the intended survey sample. Face validity was determined by asking pilot participants to consider the clarity and relevance of the questions, and whether any important questions had been omitted (Rattray & Jones, 2007). Data collected in the pilot survey was not included in the final analysis.

The survey was hosted on Microsoft Forms. The Microsoft Forms application also allows for immersive reading. This includes text-to-speech options, and adjustability of the speed of speech, size of text, style of text, spacing of text, and background colour. This ensured that the survey was more accessible to the public, including people with possible low vision or dyslexia. Furthermore, the web-based survey design enabled the researcher to enforce a required completion of answers, thus reducing non-response bias (Evans & Mathur, 2005).

### ***2.3 Participants***

Participants were recruited using non-probability sampling methods, including purposive, snowball, and self-selection sampling. Participants were recruited by sharing the survey across several social media platforms (Facebook, Instagram, Twitter, WhatsApp, LinkedIn), and through mail lists of Irish universities and volunteering organisations.

People over the age of 18 were eligible to participate if they volunteered within the Republic of Ireland during the COVID-19 pandemic. People were excluded from participating if they were paid for their volunteering role.

Power calculation for the study was based on a 95% confidence level, a 5% margin of error, the number of people over the age of 18 in Ireland (n=3,510,069; CSO, 2016) and the percentage of people in Ireland who volunteer (28.4%) (CSO, 2013). Based on the above figures, a minimum sample size of 313 participants was deemed necessary to ensure that the study had adequate power.

#### ***2.4 Data Analysis***

The data analysis was completed using Microsoft Excel and Statistical Packaging for the Social Sciences (SPSS) v.27. The data was screened, checked for errors, and data from the three open-text responses and ‘other’ options were grouped appropriately into categories. Descriptive statistics are used to summarise and describe data (Thompson, 2009). Frequency distributions were used to describe all nominal and dichotomous data. Measures of central tendency and dispersion were calculated. Chi-square tests were used to determine relationship between pre-determined variables. Data gathered from the open-ended ‘additional comments’ questions at the end of the survey was analysed using the content analysis process outlined by Bengtsson (2016).

### **3. Results**

A total of 376 people submitted responses to the survey. Of these 376 people, six did not consent to continue, 102 had not volunteered during the COVID-19 pandemic, and 14 received payment for their volunteer work. Therefore, a total of 122 people (32.45%) did not meet the eligibility criteria and were automatically directed to the end of the survey. This yielded a total of 254 valid participants. Unclear responses were regarded as missing data and were omitted when conducting the inferential statistical analysis.

Participants' ages ranged from 18 to 70, with a mean age of 33.9 (standard deviation: 14.6). A total of 162 students and staff members of universities or institutes of technologies completed the survey. 90.7% of these students and staff were from NUIG. 115 people (45.3%) volunteered in person, 81 (31.9%) volunteered online, 57 (22.4%) did both, while it was unclear from 1 participant what form their volunteering took. A summary of participant demographic and background data is presented in Table 1.

Table 1: Demographic Data

	Participants	%
<b>Age (n=254)</b>		
18-25	117	46.1%
26-35	31	12.2%
36-45	38	15%
46-55	42	16.5%
56-65	23	9.1%
66-70	2	0.8%
Prefer not to say	1	0.4%
<b>Gender (n=254)</b>		
Female	187	73.6%
Male	61	24%
Non-binary	3	1.2%
Prefer not to say	3	1.2%
<b>Employment status (n=254)</b>		
Employed	127	50%
Unemployed	108	42.5%
Unclear	18	7.1%
<b>Are you a student or staff member of any university/institute of technology? (n=254)</b>		
Yes	162	63.8%
No	92	36.2%

<b>If yes, are you a: (n=162)</b>		
Student	121	74.7%
Staff member	41	25.3%
<b>How often did you volunteer? (n=254)</b>		
Once (on 1 occasion)	12	4.7%
2 or 3 times	47	18.5%
Once monthly	3	1.2%
Once weekly	78	30.7%
Twice weekly	40	15.7%
Three times a week or more	61	24%
Irregular intervals	8	3.1%
Unclear	5	2%
<b>For how long did you volunteer? (n=254)</b>		
Less than 1 month	34	13.4%
1-3 months	63	24.8%
4-6 months	50	19.7%
7-9 months	23	9.1%
10-12 months	51	20.1%
Unclear	33	13%
<b>Do you feel that the COVID-19 pandemic disrupted your daily routine? (n=254)</b>		
Yes	234	92.1%
No	20	7.9%

Table 2: Employment status

	<b>Participants</b>	<b>%</b>
<b>Employed (n=127)</b>		
Employed (place of work not specified)	4	1.6%
Working as essential personnel (frontline worker)	43	16.9%
Working from home	77	30.3%
Mixture of working from home and working as essential personnel	2	0.8%
Self employed	1	0.4%
<b>Unemployed (n=108)</b>		
Retired	10	3.9%
Unemployed or temporarily unemployed	94	37%
Home maker	2	0.8%
Carer for family member	2	0.8%
<b>Unclear (n=19)</b>		
<b>Total</b>	<b>254</b>	<b>100%</b>



Significant differences were observed between employment status and those who were motivated to volunteer to structure their days/weeks,  $\chi^2 (1, n=188) = 21.117, p < .001, \phi = -.346$ . People who were unemployed were more likely to agree that they volunteered to structure their days/weeks than those who were employed and were more likely to agree that volunteering provided structure to their days/weeks than those who were employed [ $\chi^2 (1, n=189) = 26.222, p < .001, \phi = -.384$ ].

Although the types of volunteering that people engaged in during the COVID-19 pandemic was not explored in this survey, 33 participants mentioned the nature of their volunteer work in the 'additional comments' question. Fifteen of the 33 people volunteered within different community organisations, ten people participated in COVID-19-related volunteering, three people were involved in university-related volunteering, three people volunteered informally, and two people volunteered with animals.

### ***3.1 Motivation to Volunteer***

Motivations for people to volunteer during the COVID-19 pandemic were grouped into five different categories; altruistic motivations, personal development motivations, egoistic motivations, social motivation, and religious motivation, and are depicted in Figures 4, 5, 6 and 7, respectively. Altruistic motivations (Figure 1) were most highly rated among participants, with over 50% of participants agreeing or strongly agreeing with each of the altruistic motivation statements, except for one stating that 'I felt obliged to continue volunteering', which only 73 (28.7%) participants agreed with. The highest-rated motivation was 'to give something back to others', a statement which 242 (95.3%) participants agreed with. This was followed by 'because I wanted to use my skills for a collective good' (n=231 (90.9%) agreed) and 'because I have an interest and belief in the organisation' (n=223 (87.8%) agreed).

Sixty-six of 121 (54.5%) students agreed that they volunteered to improve their future employment opportunities, compared to 13.53% of the non-student population. Ninety-four

(77.7%) students agreed that they volunteered because they were seeking personal growth or self-development, compared to 37.6% of the non-student population. One hundred and two (84.3%) students agreed that volunteering provided them with an opportunity to learn about themselves, compared to 48.1% of the non-student population. Seventy-seven (63.6%) students agreed that volunteering was beneficial to their career, compared to 17.3% of the non-student population.

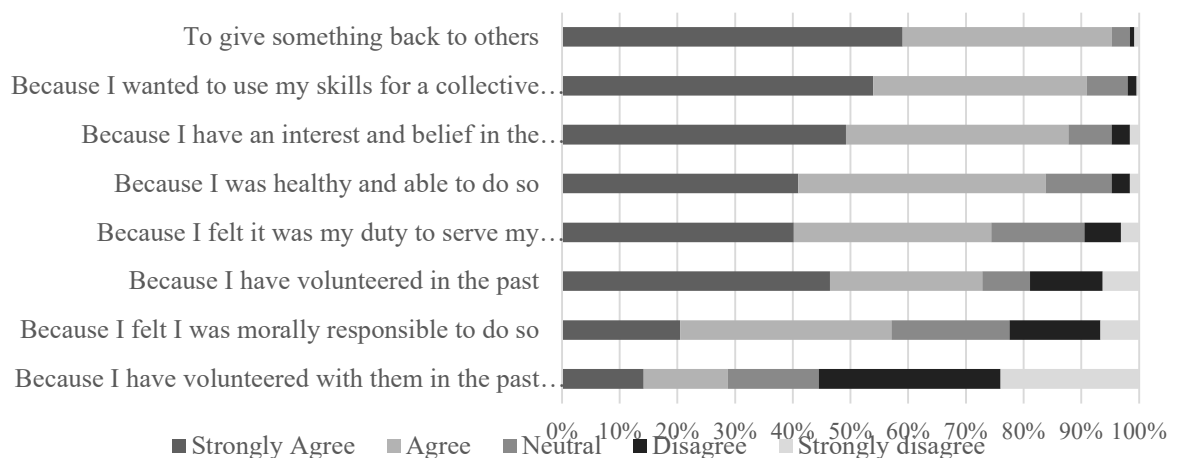


Figure 1: Altruistic Motivations to Volunteer

Altruistic volunteering motives were discussed 12 times in response to the open-ended question. These motives included the desire to contribute to their community and their society (=6), particularly during the COVID-19 lockdown.

*“I felt it was important to continue to offer club members some sense of community during the lockdown”* [P148]

Others felt morally responsible to volunteer and to help other people.

*“I felt [that volunteering] was the right thing to do”* [P243]

*“I believe in my civic duty...to assist”* [P185]

Forty-three (16.9%) participants agreed that they volunteered to provide them with an opportunity to compensate for unemployment or loss of a work role (Figure 2). This personal development motivation was also mentioned in three open-ended responses.

*“I wanted to do something to help while I was temporarily out of work” [P206]*

One participant highlighted that the opposite to this statement was true for them; their loss of employment provided them with an opportunity to volunteer.

*“I had always wanted to volunteer but never had enough time to commit to it... When I was laid off it gave me time to volunteer” [P178]*

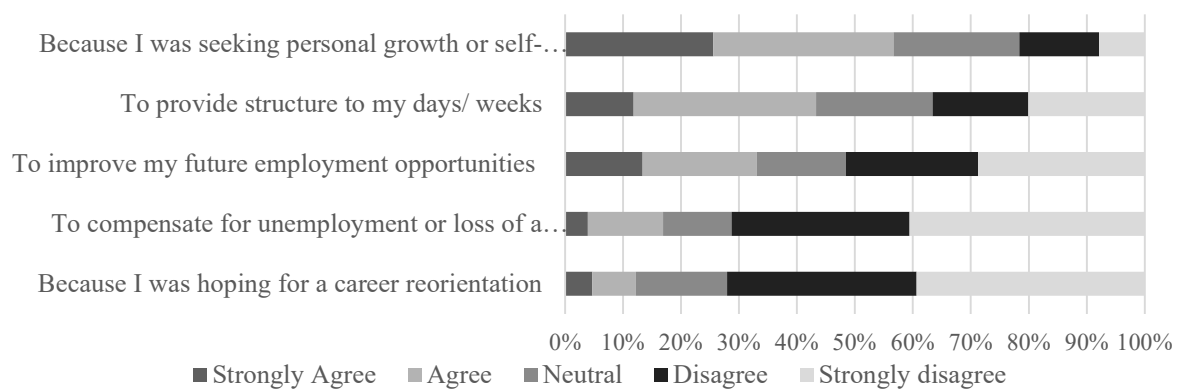


Figure 2: Personal Development Motivations to Volunteer

Exactly half of the participants agreed that they were motivated to volunteer ‘to do something outside the house’. The remaining statements relating to egoistic motivations to volunteer (Figure 3) were not rated highly among participants.

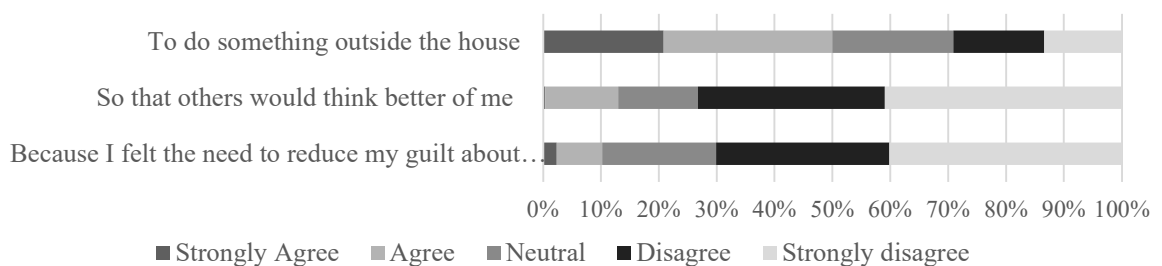


Figure 3: Egoistic Motivations to Volunteer

Social motivation to volunteer was expressed by 57.9% of participants, while only 4.3% of participants agreed that they were motivated to volunteer for religious reasons.

### 3.2 Benefits of Volunteering

Volunteering benefits were grouped into three categories; social, personal, and professional benefits. Providing people with a sense of community involvement (n=229; 90.2% agreed) was the most highly rated benefit of volunteering during COVID-19. This was followed by providing people with a sense of achievement (n=226; 89.0% agreed), and an enhanced mood (n=209; 82.3% agreed), see Figure 4.

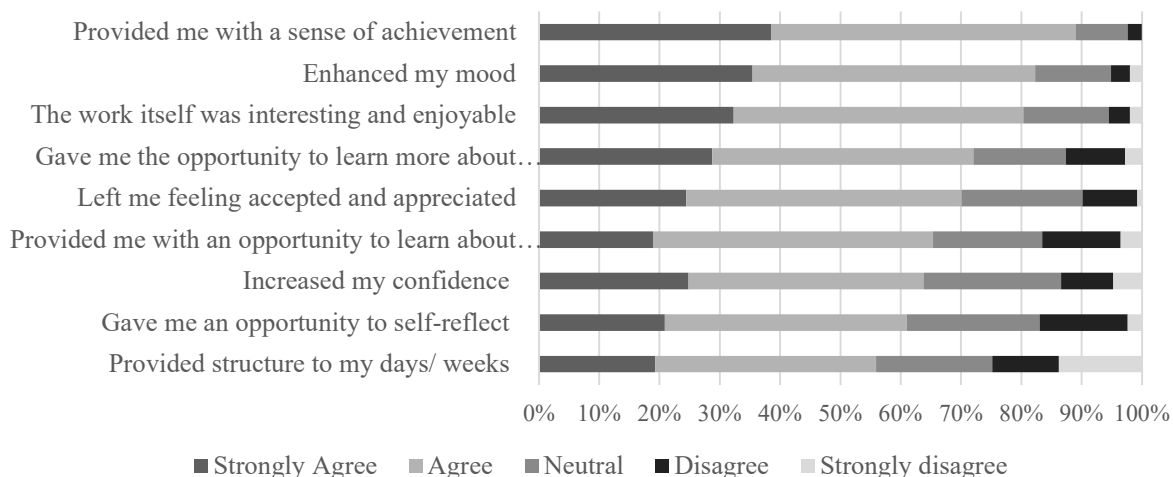


Figure 4: Personal Benefits

Professional benefits were the least rated benefits of volunteering among participants, with only 40% rating them as important (e.g. agree/strongly agree). Though some benefits were noted:

*“It...helped my self-esteem which had taken a knock when I lost my job” [P178]*

Volunteering benefits were also mentioned 36 times in response to the open-ended question, with mental health benefits most frequently reported (n=21). Examples of the mental health

benefits reported, included feeling a sense of purpose (n=5), usefulness (n=2), self-worth (n= 1), achievement (n=1), productivity (n=1) and normality (n=1).

*“Volunteering...gave me a sense of purpose and productivity that otherwise wouldn't have been possible due to the pandemic” [P34]*

*“Highly beneficial for my mental health, provided a sense of normality” [P4]*

Responses to the open-ended question at the end of the survey emphasised extremely positive aspects of participants’ volunteering experience. Participants highlighted that volunteering during the COVID-19 pandemic had been an amazing, enjoyable, and rewarding experience.

*“Volunteering is a wonderful experience...It has made a huge difference to my life and it has made me a better person” [P39]*

*“It has been one of the best experiences I have ever had” [P188]*

Participants also reported a positive experience regarding COVID-19-related precautions that were put in place for volunteers.

*“[There was] no risk was to me, my family or community. The place I volunteer had all PPE gear supplied to us and regular check-ins with us to ensure we were all ok physically and mentally” [P130]*

*“...I cannot see many risks there as the [place of volunteering] was meticulously stocked with disinfectants, all surfaces were being wiped in front of me and people were kept as socially distanced as possible” [P205]*

### **3.3 Challenges of Volunteering**

The biggest concerns for participants who volunteered during the COVID-19 pandemic, was putting the health of the people they lived with at risk (n=109; 55.9% agreed) and concern about the increased risk of catching COVID-19 (n=106; 52.7% agreed). The biggest personal challenge

for participants was the time commitment associated with volunteering (n=71; 29.0% agreed)- see Figure 5.

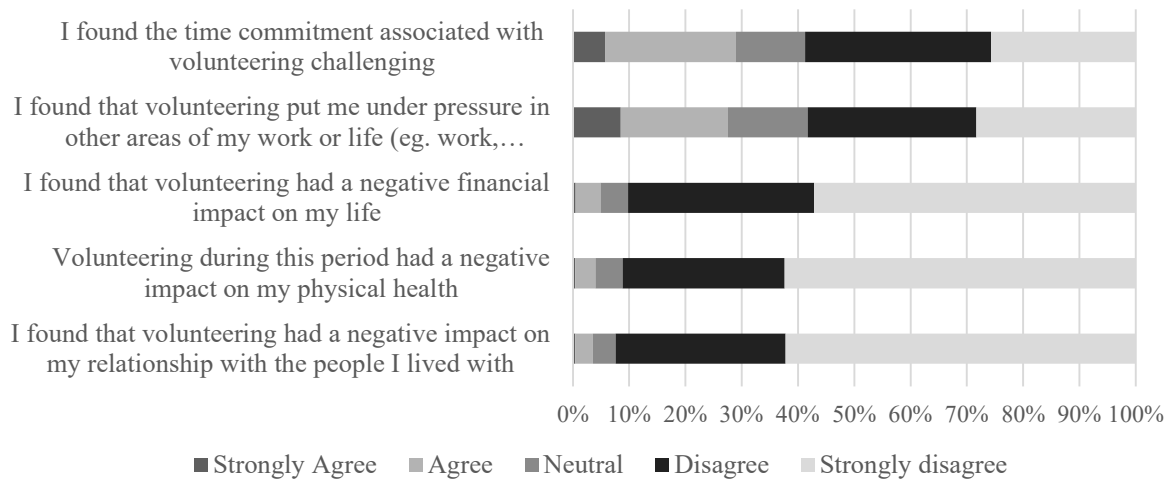


Figure 5: Personal Challenges and Concerns

Challenges associated with volunteering during the COVID-19 pandemic were also mentioned in response to the open-ended question (n=14). These included organisational challenges, such as funding issues, poorly organised volunteer training, a lack of recognition or value for volunteers, and difficulties leaving the organisation (n=9). Negative experiences regarding COVID-19-related risks were also reported by three people. These included stresses associated with the risk of COVID-19 infection, inadequate social distancing, and inadequate air circulation.

A cross-tabulation between the types of volunteering and those who were worried about the increased risk of COVID-19 was completed (Figure 6). People who volunteered face-to-face or in-person, and both in-person and remotely, were found to be significantly ( $p < .001$ ) more worried about the increased risk of COVID-19 than those who volunteered online or remotely.

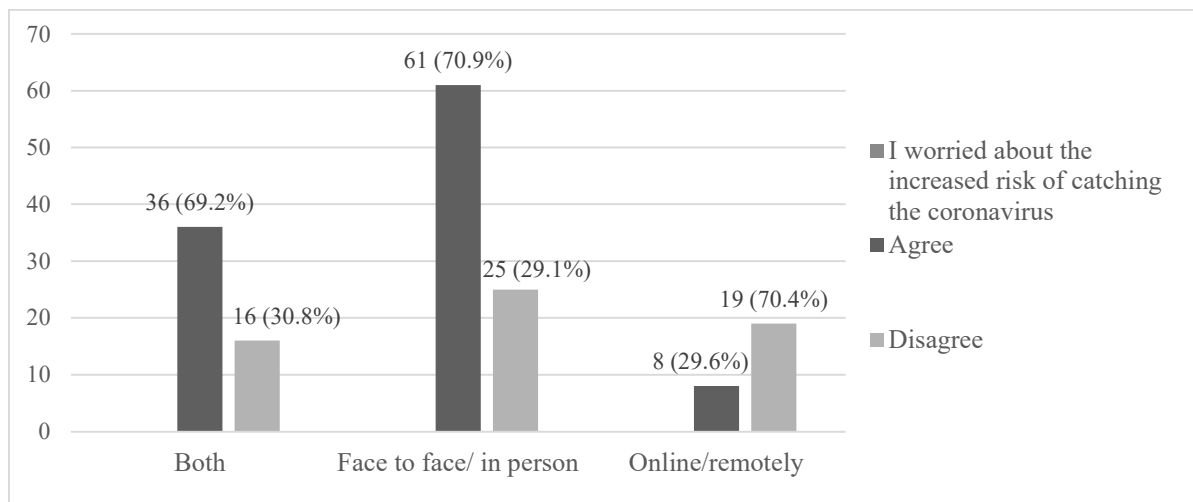


Figure 6: Type of Volunteering \* I Worried about the Increased Risk of COVID-19

#### 4. Discussion

Altruistic motivations were rated most highly among participants, with six of the eight statements related to altruistic motivation ranking higher than any other statement related to personal development, social, religious, or egoistic motivations. Providing people with a sense of community involvement was the highest-rated benefit of volunteering during the COVID-19 pandemic, while putting the health of the people they lived with at risk was the biggest concern among participants.

Altruistic motivations, rated highly here, were also among the most highly rated motivations of medical students who volunteered during the COVID-19 pandemic, according to recent studies completed by Chawłowska et al. (2021), Adejimi et al. (2021), and Bellomo et al. (2020). This may reflect a potential social desirability bias, whereby participants may have felt a desire to provide a more socially acceptable response (Bergen & Labonté, 2019), thus, possibly increasing the strength of altruistic motivation responses (Shye, 2010). However, the anonymity of participants was ensured to reduce the risk of social desirability response bias (Larson, 2018).

Wanting to use one's skills for a collective good was the second-highest reason in this study for volunteering. This was also reflected in the literature, with studies by Christensen et al. (1999),

Kpanake et al. (2019), and Herrick and Brooks (2019) reporting that participants volunteered because they wanted to use their professional skills to help others. Other altruistic motives frequently mentioned in the literature include the desire to help one's community or country (Akintola, 2010; Kironde & Klaasen, 2002; Kpanake et al., 2019; Reeder et al., 2001; Stewart & Weinstein, 1997; Thomas et al., 2007; Topp et al., 2015), and a sense of moral responsibility to help those in need (Kpanake et al., 2019; Simon, Stürmer & Steffens, 2000; Stewart & Weinstein, 1997; Tempski et al., 2020). In this study, over half of the participants agreed that it was their duty to serve their community and country and that they were morally responsible to volunteer. Altruistic motivations were also discussed in the open-ended question, with participants highlighting a moral responsibility to volunteer and a desire to contribute to the community.

Studies assessing student motivation to volunteer during the COVID-19 pandemic (AlOmar et al., 2021; Shi et al., 2021, Tempski et al., 2020), reflect findings from this research emphasising the desire to improve future employment opportunities as a motivation for students to volunteer. Those who were unemployed were significantly more likely to agree that they volunteered to provide structure to their days and to improve their future employment opportunities, than those who were employed. A study by Pavlova and Silbereisen (2014) also found that people aged 16-29 who were facing occupational uncertainty, had an increased likelihood of volunteering. This may explain the large proportion of student volunteers and volunteers who were unemployed in this study, as students and unemployed people are likely to experience occupational uncertainties (Lechner, Tomasik & Silbereisen, 2016; Mantler et al., 2005). Furthermore, occupational uncertainty among participants may have been exacerbated by the COVID-19 lockdowns (Mimoun, Ari & Margalit, 2020) and high unemployment rates in Ireland (CSO, 2021), providing students and unemployed people with an increased motivation to volunteer.



Providing people with a sense of community involvement was the most highly rated benefit of volunteering during the COVID-19 pandemic. This was followed by providing people with a sense of achievement and an enhanced mood. Similar volunteering benefits were also frequently mentioned in response to the open-ended question, including feeling a sense of purpose, usefulness, self-worth, achievement, productivity, normality, reduced COVID-related stress, enhanced self-esteem, social benefits, and professional development benefits. Volunteering during a pandemic is reported to provide participants with a sense of internal satisfaction and accomplishment (Christensen et al., 1999; Herrick & Brooks, 2019; Lopez, Glick & Berthold, 1998; Shi et al., 2021; Thomas et al., 2007), feeling useful and appreciated (Chawłowska et al., 2021), improved self-confidence (Ramirez-Valles & Brown, 2003; Thomas et al., 2007; Trautwein et al., 2020), and social benefits (Herrick & Brooks, 2019; Lopez, Glick & Berthold, 1998; Ramirez-Valles & Brown, 2003).

Putting the health of the people they lived with at risk was the biggest concern for participants who volunteered during the COVID-19 pandemic. Concern regarding the risk of exposure to COVID-19 was mirrored in other studies focused on pandemic volunteering (AlOmar et al., 2021; Bazan, Nowicki & Rzymiski, 2021; Lopez, Glick & Berthold, 1998; Tempski et al., 2020), reporting that participants felt anxious, fearful, and stressed about contracting HIV, hepatitis, or COVID-19. Findings from this study show that over half of the participants volunteered online or remotely, suggesting that virtual volunteering was a popular option for volunteers during the COVID-19 pandemic. Given that virtual volunteering is inclusive of, and accessible to people with disabilities (Lachance, 2020), and reduces risks associated with pandemic, this could be an option for those worried about health and risks associated with in-person volunteering.

#### ***4.1 Limitations***

Although this study provides insights into the motivations, benefits, challenges, and concerns associated with volunteering during the COVID-19 pandemic in Ireland, several limitations

exist. While the online nature of the survey enabled a wide geographical range of people to participate (Faleiros et al., 2016) and was also inclusive of people with disabilities (e.g., low vision, dyslexia), people with limited internet access may have been restricted from completing the survey (Taherdoost, 2016). Furthermore, the survey was primarily promoted and distributed via social media. Given that only 25% of those with internet access in Ireland over the age of 70 (TILDA, 2020) use social media, this survey may not have been sufficiently advertised among older adults and may reflect the small percentage of older adults who completed the survey. People under the age of 18 were also excluded, while those with an inadequate level of English to complete the survey may have been restricted.

While 376 survey responses were submitted, only 254 people met the inclusion criteria. As no definition of volunteering or examples of what qualified as volunteering was provided for participants, some people may not have considered the work they did, volunteering. This may have reduced the overall sample size and may explain why 102 people who submitted a response did not agree that they had volunteered during the COVID-19 pandemic. The minimum sample size of 313 participants was not achieved, which may impact the power of the study (Bujang, 2016). Furthermore, as this study used self-selection sampling, potential volunteer bias may exist (Sedgwick, 2015).

The large number of volunteers from NUI Galway indicates a potentially disproportionate geographical representation of the Irish volunteering population. This is likely due to the extensive advertisement of the survey among the students and staff of NUI Galway. However, given that the university campus was closed for the duration of the survey, it is difficult to determine the geographical spread of the participants in this study.

#### ***4.2 Implications for Future Research***

Findings from this study show that over half of the participants volunteered online or remotely, suggesting that virtual volunteering was a popular option for volunteers during the COVID-19

pandemic. However, this study did not address the specific benefits and challenges associated with volunteering remotely. Given that virtual volunteering is inclusive of, and accessible to people with disabilities (Lachance, 2020), and those from rural settings with restricted access to transportation, future research should continue to expand on the limited virtual volunteering research.

Results from this study may inform volunteering organisations, particularly those who continue to recruit volunteers during this COVID-19 pandemic or those who seek to recruit during potential future pandemics. By understanding what motivates people to volunteer and what the self-perceived benefits of volunteering are, volunteering organisations may be able to tailor their recruitment campaigns to appeal to volunteers, based on the results of this study (e.g., highlighting the opportunity to give back to others or to experience a sense of community involvement). The results of this study may also inform volunteering organisations of the challenges and concerns raised by volunteers (e.g., COVID-19 related concerns, organisational issues, lack of volunteer recognition), enabling them to address and overcome these challenges and concerns in the future.

Finally, given the benefits outlined for unemployed people in this study, further research should be conducted to explore these benefits. A comparison between those who are unemployed and volunteering, and those who are unemployed and not volunteering may provide more insight into these benefits.

## **5. Conclusion**

Results from this study suggest that volunteering provided people experiencing occupational uncertainty with an opportunity for personal growth and self-development, and may help establish occupational identity (Van Ingen & Wilson, 2016). Providing people with a sense of community involvement was the highest-rated benefit, while putting the health of the people

they lived with at risk was the biggest concern among participants in this study. As this study was, to the researcher's best knowledge, the first to explore the motivations, benefits, challenges, and concerns associated with volunteering during the COVID-19 pandemic in Ireland, its findings provide a valuable addition to the current body of research regarding COVID-19 pandemic volunteering.

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# **A Reciprocal Intercommunication between Reader and Writer: A Critical Study of Cyber Literature**

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**Abstract:** Since the accessibility of the internet, cyber literature can be an act of bringing ease, evolving preferences and mindsets. This research may be a survey focused on the opinions of the respondents on the nature of social media cyber literature; of its gain and effect on the reader. This research is limited to the collective poems on Facebook. The logic is simple; the shortened version is preferred. Poetry is more likely to be used for the interpretation of reader-writer interactivity in cyber literature. The technique is the literary theory of reader reaction with attention to Facebook's reader-writer personalization. The objectives of this article were to expose the impetus of audiences to react to the submitted text, the reasons why they really like, and what its benefits are. The findings showed that cyber literature is effective in implementing a substitute writing style that also improves writers' enthusiasm and imagination to make use of the digital content.

**Keyword: Cyber Literature; Poetry; Social Media; Interactivity; Reception Theory; Reader Response Theory**

**Doi: 10.5281/zenodo.6465122**

## 1. Introduction

Literature may be a reading that contains elements of entertainment, education, and knowledge. It's an author's creative work poured in beautiful language. Literature stimulates the sensitivity of its readers. It presents various aspects of life and even constantly parses life or even a mirrored image of life. Literature was born since humans inhabit this earth. Even before humans know orthography, literature has already become a neighbourhood of human life. Literary works are a neighbourhood of the culture. As a cultural product, literature develops in line with the event of human life. Human history has noted various developments in literary media. One among them is that the birth of the web together with the media of data and science development, which successively is additionally getting used as a medium for promoting literary works. Numbers of works that are read through the web media are categorized as cyber literature.

One of the hallmarks of this genre is it offers 'reader-writer interactivity. It's tough in conventional literary composition.

Many terms used thus far for cyber literature like a literary machine (Nelson, 1993), Cybertext (Eskelinen, 2012), digital literary (Hoover, et al. 2014), digital media (Ryan, 2013), digital literature (Sanz, 2007), and electronic literature (Hayles, 2001). The electronic literature also has close affinities with the digital arts, computer games, and other forms related to networked and programmable media. It's also deeply entwined with the powerful commercial interests of software companies, computer manufactures, and other purveyors of apparatus related to the networked and programmable media (Katherine, 2008).

In this article, the author is going to be using the term "cyber literature" to ask the written literary texts, distributed (uploaded) and skim on-screen of the pc. The formation of computer networks, alongside the volatility of inscription of digitized information, allows fictional worlds to grow, to be modified from the within and out of doors, and to offer birth to other worlds (Ryan, 2013). The rationale for preferring this term (cyber literature) to others is that it alludes to the 2 umbrellas of this broad category of text: the literary tradition and therefore the literary on computer. In some cases, the study of cyber literature is closely associated with the study of Cybertext. Cybertext focuses on ergodic literature, where the user has got to

do nontrivial work to traverse the text (instead of merely interpreting it) after a radical critique of existing paradigms (Eskelinen, 2012).

Cyber literature was born with the impact of technological development. The new following five centuries of domination of the book are getting into the "margins of literate culture" (Bolter, 1991). He claims that print does not define the "organization and presentation of data" or maybe the character of knowledge itself. Electronic texts, shaped by readers as writers, will still replace single-voiced and unified print texts. The pc, like all technologies, defines a specific "physical and visual" field. Its writing space transforms writing into something fluid, not fixed. The previous literary media used newspapers and magazines because of the medium, and then the medium of the cyber literature is on electronic space (internet). Comparing to literary newspapers or magazines, in cyber literature, writers experience ease within the appearance of their work to the reader because there's no strict selection of the literature. It's impressive, everyone can become a poet and everybody can become a critic. Therefore, it's likely that the electronic medium as a way of expressing one's expression will overwhelm and shift the previous medium. All these happen due to the rapid development of technology. The reader judges the standard of the work. However, good work will definitely always have its own readers and constant readers forever. Cyber literature has emerged since the top of the last century, which is around the 1990s. Despite the very fact, the birth of cyber literature within the world of literature is respected and appreciated differently. On the one hand, there's a welcome it positively, but not rarely judged negatively. It had been greeted to be negative because the cyber literature is taken into account to not maintain quality and spontaneously folded alone. It's often considered an uncontrolled publication of literature. On the contrary, it's positively welcomed because the presence of cyber literature is often easily and quickly accessed by readers more widely. Additionally, the presence of cyber literature through the web provides a chance for authors who add the sector of literature to contribute, both within the sort of works and thoughts, responses to the event of literary works. This is often where reader-writer interactivity occurs.

The reader-writer interactivity may be a part of the idea of receptions developed by Hans Robert Jauss (1982). The idea was promoted in Germany when Hans Robert Jauss published a paper entitled *Literary Theory as a Challenge to Literary Theory* (1970). The main target of attention (reader-response theory) is that the acceptance of a text by the reader. Although it had been not exactly what Jauss meant, but a minimum of, within the reader-writer

interactivity, this approach will involve two important things within the reader-writer interaction, they're immersion and self-reflexivity. Exploration and self-reflexivity have gained immensely from the use of online technology. it's richly designed imaginary worlds, hypertext fiction explodes these worlds into textual shards, code poetry promotes awareness of the machine language that brings text the screen (Ryan, 2013), and what Fruin (2013) calls "process-intensive" works direct attention far away from the surface of the screen, toward the virtuoso of programming that generates the text. Actually, the event of technology automatically will greatly affect the cultural aspects and social life of a nation, not least the literature. In fact, the event of technology, on the one hand, will have a positive impact and on the opposite hand, will bring a negative impact. Hence, it is also against the presence of literature through electronic media. However, we don't need to worry an excessive amount of about the presence of cyber literature in our midst.

## **2.Digital Supports and Literary work**

The presence of cyber literature through electronic media shouldn't be underestimated. Supposedly, cyber literature can still be positively accepted because inevitably, the literature will become a part of the history of literature. Through electronic media, it's expected a minimum of for the longer term will mention many new possibilities which will be done by the authors. These symptoms should be viewed as a breakthrough. The event of technology, especially the web is often considered an excellent revolution of its influence during this life. Life becomes easier. One of the positive effects is on the planet of literature. Now, the spread of data through internet media is unmatched. Such rapid and unlimited deployment makes life more global. Thanks to the influence of technology, culture also becomes compound and sophisticated. The culture of a nation would be easy to develop, alongside the event of technology. With the web, a minimum of it is often wont to force and help the event of literature to become better. One among the evidences, the web by itself obviously gives a replacement space for writers to write down and promote their works.

However, it can't be denied that cyber literature on Facebook for instance is considered an object that has two sides of the coin, additionally to the negative side; it also, of course, has advantages. Indirectly, the presence of senior writers on Facebook will provide a positive influence on novice writers. Through the posts, comments, and inter-wall communication they're going to provide some benefits. For beginner writers, they're going to get the points of

the way to write good work. As for senior writers, additionally, to market the works for free of charge, they're going to also get an immediate correction via comments, either from fellow writers of Facebook users or from other readers also. This is often one among the benefits of cyber pieces of literature on Facebook that opens the likelihood of reader-writer interactivity that's almost impossible to try to do with conventional works. Within the conventional work (printed version), the foremost likely to try to do is reader response without interactivity. The reader of respondents is vital enough to interpret the literary works from the reader's side but could also be the results of the response aren't known by the author. Unlike the case with reader-writer interactivity, the interactive process will occur in writing between the reader and therefore the author.

In this study, there is a minimum of four methods contained within the response of readers to cyber literary works. Critical comment, praise, critique, and sycophancy are all included in this strategy. Due to the themes of this research are students of literature learners, therefore the aspects to be traced are the extent to which the themes answer cyber literary works using the four methods of the response of readers as mentioned before.

### **3. Social Networking and High-Tech/Cyber Literature**

The genre of literary works is split into prose and poetry. Novel, drama, short-story belong to prose, while poems, verse, lyric, proverb, joke, minstrelsy, and Malay pantun belong to poetry. Poetry may be a piece of literary composition written by a poet in expressing various emotions which are expressed by the utilization of a spread of various techniques including metaphors, similes personification, and onomatopoeia. These methods are what commonly won't to distinguish poetry from prose. The prose is often defined as ordinary creative writing with no metrical structure. Poems often make heavy use of images and word association to quickly convey emotions (Wellek & Warren, 1956). Some poetry types are specific to a specific genre and culture and that they answer characteristics of the language during which the poets write, like Malay pantun and elegy. Poetry may be a work that consistently exploits the potential of words used strictly and meaningfully. The facility of poetry lies within the use and selection of words and therefore the sorts of expression. The important meanings contain, if not mostly, sometimes ambiguous and multi interpretation. Since their words are ambiguous and multi interpretation, in order that they provoke the readers to react and write comments. Cyber literature favors the short form. In cyber

literature, the relation between author and readers is cybernetic relation, where they never meet. Their meeting is merely on the web or social media. They typically are incorporated in groups like on Facebook. The wall of Facebook is then to form used for publishing poems and therefore the like. It's in fact not all members are poets. But they're people that have an interest in literature or being learning literature. On the education side, the Facebook group is extremely helpful for those that have an interest in studying and studying literature, especially students of the department of literature.

#### **4. An Interaction between Reader and Writer**

Reader-writer interactivity is one of the new strategies in literary appreciation. Through social media, the simplest thing to watch is that the interaction between writers and readers on Facebook. Comparing to other social media, Facebook has its advantages because it provides comment and reaction space (like, love, wow, haha, sad and angry). Interaction occurs not only in writer and reader interactivity but between readers also. The results of mutual opinions and sharing comments are often employed by writers for the event of ideas within the future. Nowadays, literary dissemination has evolved through various media; newspapers, magazines, books, and up to the foremost recent is that the internet medium. Before the birth of the press, literary works were stored in oral form, papyrus scrolls, and parchments to printing books. The restrictions of the medium at high prices have hindered the spread of literature. It seems that the presence of cyber literature may be a natural development and quite amazing because it's been the answer to the birth of works from the chance to write down on the web space. Before the birth of cyber literature, computer and therefore the internet are two things can't be separated from one another. Consistent with Ryan (2013), the pc provides not only a channel of transmission for the texts of fan fiction, but it also can become a tool of production. The functional approach to the reader in cybertextuality calls to mind Foucault's author function (1991) as a function of the discourse that has its social, historical, and legal implications. The appliance of this will be applied in some social media like Facebook, Line, WhatsApp, MySpace, and even Blogs that provide columns for interaction. But the foremost ideal today is on Facebook. A poem, for instance, someone can upload it on the Facebook wall as standing; the author will then get a response from the readers. The reader's response is then responded back by the author. This is often what's called the writer-reader interactivity.

Why poetry? Once more, one of the advantages of this genre (in reference to cyber literature) is it offers 'reader-writer interactivity. This still includes a replacement study in literary research. In other words, the readers' responses contribute to the meaning of literary works. Within the sociology of literature, such literary meaning is included within the study reception theory. Reader - writer interactivity is included within the reception theory area. "A general change in concern from the author and thereby the work to the text and thus the reader," according to Holub's (1984) reception theory. It reflects a paradigm shift within the history of literature, and it's considered "a reaction to social, intellectual, and literary developments. This theory is defined as reader-response literature that emphasizes each particular interpretation and reception in making meaning from a literary text. Furthermore, reception theory (Tompkins, 1980) may be a version of reader response literary theory that emphasizes each particular reader's reception or interpretation in making meaning from a literary text. Reception theory is usually mentioned as audience reception within the analysis of communications models. In literary studies, reception theory was originated from the work of Hans Robert Jauss within the late 1960s.

## **5. Aims and Objectives of the research**

This research aimed toward 1) revealing various sorts of reader-response through online media, 2) tracing the advantage and drawbacks of reader-writer interactive on social media, and 3) checking out the motivation of the reader to reply to the uploaded text (poetry). The objectives of the research are formulated to support this research topic. The primary and therefore the second objective are often reached through a questionnaire. The third objective is often reached through an in-depth interview. Through in-depth interviews, the themes may express their motivation to answer the questions as they expect from them. The info of this research was gathered for almost one semester (18<sup>th</sup> December 2019 – 19<sup>th</sup> March 2020).

## **6. Data Collection Technique**

This study observed cyber literature readers, especially students who wish to read literary works uploaded on blogs, Facebook, and other sites online. And the reader will leave a comment in certain areas. Through the reader's comment, there'll be an interaction between the author and therefore the reader, or also between fellow readers. Their comments are often read on Facebook. The info of this research is gathered from questionnaires and interviews to



elicited information from the themes. The population of the research is that the English Literature Department ongoing Students of Maulana Azad National Urdu University, Hyderabad of 2020 school year. Of the 257 students who completed the questionnaire, 162 (69%) among the respondents answered that they actively read and skilled cyber literature on the web, 31% said none in the least. There are 162 students followed by giving a questionnaire to seek out their opinions about cyber literature. The questionnaire question revolves around three important interrelated aspects: 1) what does one believe in cyber literature? 2) How does one like cyber literature? And 3) is cyber literature relaxing (enjoyable)? So as to ensure the question's reliability, researchers have conducted a questionnaire test to live validity. Summary of respondent answers are often seen within the following table:

**Table 1: Response of the Respondents**

Do you read cyber literature	Percentage%
Yes	69%
Cyber literature is exciting	33%
It is entertaining	16%
It is relaxing	14%
Others	08%
No	29%
Cyber literature is junk	14%
It is boring	07%
It is not interesting	05%
Others	03%
Not sufficient answer	02%
Number of Respondents 257	Total 100%

Depending on the “yes” group (162 respondents), it's possible to deduce that participants' reactions to the Facebook wall post (particularly poems) were ranged.

**Table 2: Reading & Response on Facebook**

What is your reaction on the Facebook status?	Percentage%
Commenting as response	24%

Commenting as response + reacting	45%
Reacting only	18%
Just reading	13%
Number of Respondents 162	Total 100%

Table 2 showed that 45% of respondents, not only commented on the post but to react as well. In other words, 69% (24%+45%) of respondents certainly give a response. The amount is significant enough to state that cyber literature on Facebook attracts student interest and has a positive impact on literary readers, especially poetry.

The following are some examples of Facebook poetry groups linked to cyber literature (all groups are in Indonesian):

**Table 3: Facebook Groups for Cyber Literature**

Name	Facebook Link
Penyair Facebook	<a href="https://www.facebook.com/groups/189468621244597/">https://www.facebook.com/groups/189468621244597/</a>
Pis – Puisi Indah Semua	<a href="https://www.facebook.com/groups/157770477661745/">https://www.facebook.com/groups/157770477661745/</a>
Rumah Literasi	<a href="https://www.facebook.com/groups/372516746452643/">https://www.facebook.com/groups/372516746452643/</a>
Gempita Biostory	<a href="https://www.facebook.com/groups/138479022979602/">https://www.facebook.com/groups/138479022979602/</a>
Puisi & Kata Bijak	<a href="https://www.facebook.com/groups/puisidan.katabijak/">https://www.facebook.com/groups/puisidan.katabijak/</a>

\*\*\***Legend:** *Penyair Facebook* (Facebook Poets), *Pis – Puisi Indah Semua* (All Beauty Poems), *Rumah Literasi* (Literacy House), *Gempita Biostory* (Vibrant Biostory) and *Puisi & Kata Bijak* (Poetry and words of wisdom)

## 7. Debates and Discussion

In principle, the only question during this study is “do you read cyber literature?” After categorizing the responses, 69 percent of respondents said "yes," 29 percent said "no," and a few others said "not enough." To whom answer “yes”, after the answers are grouped, it's found a variety of reasons as follows 1) cyber literature is exciting (33%), 2) it's entertaining (16%), and 3) it's relaxing (14%), et al. (08%) cover provide new experiences, hone skills, and encourage creativity. As for who answered ‘no’ due to 1) cyber literature is junk (14%), 2) its boring (07%), 3) its not interesting (05%), et al. (03%), like dalliance, less useful, and therefore the like. These reasons are often ascertained as a representation of respondent’s “perceptions of the presence of cyber literature by utilizing social media (here is Facebook). Together with social media, Facebook is often used for sharing information, connecting people, introducing and promoting something, and for the sake of appreciation of literature. The appreciation of literature through online media is one of the opportunities to ascertain the appliance of writer-reader interactivity in cyber literature. Supported the response of the respondents, it's certain that a variety of respondents (69%) reading cyber literature and doing interact with writers, or if they're writers, they also interact with their readers. This number is critical enough to state that cyber literature on Facebook is enough to possess a positive impact on literary readers, especially on the literary composition of poetry.

Facebook may be a representation of data technology to attach people within the world. It becomes an alternate means of learning literature. Facebook is groomed for the progress, goodness, and development of the literary world. Facebook became one of the media alternatives for saving literary documents. The approaching cyber literature, it promotes the cyber writers in cyberspace. Cyberspace suddenly became something sort of a showroom for promoting literary expression especially poetry. Aside from its weaknesses and advantages, Facebook is simply one sort of technological advancement. It isn't fair if Facebook is avoided simply because of some disadvantages. Facebook's position if addressed properly, it is often wont to become a medium of learning, one among which is literary learning.

## 8. Conclusion

The birth of cyber literature is some things that can't be avoided. It had been born by utilizing the facilities provided by cyberspace. This example is enriched by the fluid nature of digital media that is the medium of data dissemination. One among social media is Facebook. Such social media may be a two-sided object, on the one hand, it is often used for an honest things and on the opposite, it is often used for evil (cyber bully for instance). It all depends on who is going to use it. The research found that Facebook together with the media of cyber literature is extremely popular for the reasons: a) it's easily accessible, b) authors and readers can interact directly c) interaction between fellow readers is straightforward to try to, d) it's a way of socializing with authors and readers, e) available public groups and closed groups, and f) special conversations are often made through the inbox. However, Facebook is additionally not free from weaknesses. For instance, Facebook is often misused among others: a) to cheat, b) to bully, c) to spread hoaxes, and d) to impress. Maybe this is often because Facebook cannot distinguish between the first account and therefore the fake one. The profile picture is usually not just like the owner. Cyber literature is mediated by the technology of computers. The technology has triggered the interest of many authors to permit their motivation and creativity to form use of the space (internet wall). In some cases, both printed publication and cyber publication have differences and similarities. But the presence of media technology has changed the way of view and barriers of the planet thus far. The age of technology (internet) has a minimum of shifted the attitude and attitude of the people about the importance of documenting a literary composition. Through the web space, literary documentation becomes easy. It's a bit like a book or any piece of literature which will be recorded as a source of the document where the author and reader can look them back at what they need to be written. The research concluded that Facebook is often a medium of cyber literature with unlimited space. This chance has been exploited by poet writers to introduce their works. In turn, literary learners can appreciate cyber literature through Facebook with writer-reader interactivity. The idea belongs to the reader-response of a literary text.

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## **The role of nutritional and environmental alterations of Epigenetics on Human health system**

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**Abstract:** Environmental epigenetics depicts how natural elements influence cell epigenetics what's more, consequently, human wellbeing. Epigenetic marks modify the spatial conformity of chromatin to direct quality articulation. Ecological variables with epigenetic impacts incorporate practices, nourishment, furthermore, synthetic compounds and modern contaminations. Epigenetic systems are additionally embroiled during improvement in utero and at the cell level, so natural openings might hurt the baby by weakening the epigenome of the creating organic entity to change illness hazard further down the road. Paradoxically, bioactive food parts might trigger defensive epigenetic adjustments all through life, with right on time life sustenance being especially significant. Past their hereditary qualities, the general wellbeing status of an individual might be viewed as a coordination of numerous natural signs beginning at incubation furthermore, acting through epigenetic changes. This audit investigates how the climate influences the epigenome in wellbeing and infection, with a specific spotlight on the disease. Understanding the atomic impacts of conduct, supplements, and poisons may be applicable for creating protection techniques also, customized health programs. Moreover, by re-establishing cell separation, epigenetic drugs could address a likely procedure for the therapy of numerous sicknesses including cancer/malignant growth.

**Keywords:** Environmental epigenetics, cell level, nutrients, cancer

**Doi:** [10.5281/zenodo.6465151](https://doi.org/10.5281/zenodo.6465151)

## 1. Introduction

Epigenetics alludes to the control of quality articulation of genes through instruments not straightforwardly identified with the DNA coding grouping. Therefore, all cells in a creature have totally different aggregates notwithstanding having a similar genome. Epigenetics adjusts and directs quality articulation through different epigenomic "marks", the term given to synthetic mixtures added to DNA or histone proteins and perceived by catalysts that either set down or eliminate the particular imprint (Grunstein, 1997; Guerrero-Bosagna & Skinner, 2012). These imprints change the spatial conformity of chromatin: either compacting it, subsequently forestalling the limiting of record elements to the DNA, or opening it, permitting record factor restricting and generally upregulating cell processes. DNA methylation is the expansion of methyl gatherings to the 5-carbons of cytosine deposits in CpG islands to bring about 5-methylcytosines-cooperates with histone changes to control quality articulation (Struhl, 1998). DNA methylation will in a general demonstration at advertisers to prompt quality hushing, while histone acetylation normally loosens up chromatin. DNA methylation is catalyzed by chemicals in the DNA methyltransferase (DNMT) family, which enrolls the utilitarian buildings concerns containing DNA methylation areas, prompting transcriptional hindrance or keeping an abusive chromatin state (Kouzarides, 1999).

Histone acetylation is related to transcriptional action and an open chromatin state. Acetylation of histone tails is constrained by two compound families: histone acetyltransferases (HATs), which move an acetyl gathering, and histone deacetylases (HDACs), which eliminate acetyl gatherings. Other epigenetic marks are additionally depicted and incorporate histone post-translational alterations such as methylation, ubiquitination, sumoylation, phosphorylation, biotinylation, and ADP-ribosylation, which either advance or stifle quality articulation. The example of these imprints on histone tails is frequently alluded to as the histone code, which directs the limiting of effector proteins that thus results in explicit cell processes. Non-coding RNAs (ncRNAs) are one more kind of explicit epigenetic mark that intervene differently intracellular cycles. An ncRNA is a useful RNA atom interpreted from DNA yet not converted into protein. The best-described ncRNAs are microRNAs (miRNAs), which are short, single-abandoned, 19–24 nucleotide ncRNAs. miRNAs direct quality hushing at the transcriptional and additionally the translational degree of protein-coding qualities (Huang, Jiang, & Zhang, 2014). Long non-coding RNAs (lncRNAs) are another subset of RNAs more than 200 nucleotides long that capacity as chromatin remodelers, transcriptional controllers, and post-

transcriptional controllers. Numerous lncRNAs complex with chromatin-adjusting proteins to enlist their reactant action to explicit genomic locales, in this manner adjusting chromatin states and impacting quality articulation. With almost no protein-coding potential, lncRNAs all things considered take part in different intracellular cycles, and ongoing examinations have recognized that specific lncRNAs are explicitly connected with specific malignant growths. With the improvement of high-goal sequencing and high-throughput advancements, a huge number of naturally useful ncRNAs have now been recognized (Lillycrop, Hoile, Grenfell, & Burdge, 2014). Likewise, there is crosstalk between DNA methylation and histone adjustments; for instance, histone methyltransferases, histone demethylases and embellishment proteins communicate and arrange the chromatin state and DNA methylation and methylation status of histones are firmly related. Besides, different ncRNAs are likewise firmly connected with other epigenetic marks, which structure broad crosstalk all through the cell, or the "epigenetic network" (Choi & Friso, 2010; Hussey, Lindley, & Mastana, 2017). There is presently a lot of proof that the epigenetic control of the genome is definitely more convoluted than first suspected and includes different epigenetic systems and their associations. All the more as of late, histone variations, for the most part of sanctioned histones H2A, H2B, and H3, with explicit properties have been distinguished in people and other higher eukaryotes. The vast majority of them are H2A variations, among which macroH2A1 produces elective graft isoforms, i.e., macroH2A1.1 and macroH2A1.2. MacroH2A1 isoforms give off an impression of being basic controllers of chromatin structure and chromatin elements during cell senescence, recovery, and fasting. The capacity of these histone variation proteins and their atomic components in wellbeing and during an organic entity's life expectancy is investigated. The revelation of histone variations and their variety has added further intricacy to setting subordinate organic frameworks and their guideline, for example, during wellbeing, maturing, and in obsessive conditions including malignant growth. This is a space of continuous examination since chromatin elements all through life are probably going to change and the epigenome experiences a moderate misfortune in setup during maturing. The subsequent strange chromatin state during maturing is described by various consolidated histone variations, nucleosome redesigning, modified histone alteration designs, and modified DNA methylation designs, bringing about the enlistment of various chromatin modifiers, unusual quality articulation designs, and genomic precariousness (Lo Re & Vinciguerra, 2017). Among the various variations of histone H2A, macroH2A has been embroiled in the maturing (Pal &



Tyler, 2016); its level expansions in the age-subordinate way during replicative senescence in refined human fibroblast cells and furthermore in a few tissues of matured mice and primates.

## **2.Methodologies and Results**

The research based data were obtained from the different tool-based research sites on environmental, epigenetics changes, nutritional values and factors-health and medical based information as; NIH ([National Institutes of Health \(NIH\) | Turning Discovery Into Health](#)), PubMed ([PubMed \(nih.gov\)](#)), Medical Research Council ([Home - Medical Research Council \(ukri.org\)](#)), Nutritional-Research ([HOME \(nutritionalresearch.org\)](#)), NIH-Health\_Environment ([Epigenetics \(nih.gov\)](#)), after that all results are compiled and analysed.

## **3.Environmental impact of epigenetic**

These dynamic or oppressive imprints are additionally reliant upon the way of life and natural elements. "Ecological epigenetics" alludes to how natural openings influence epigenetic changes. Educational encounters, propensities, and our current circumstances shape what and who we are by temperance of their effect on our epigenome and wellbeing; for example, albeit indistinguishable twins share a similar genome and are hastily phenotypically comparative, they are one-of-a-kind people with determinable contrasts (Pal & Tyler, 2016). These distinctions result from unmistakable quality articulations affected by epigenetic factors. Conduct, nourishment and openness to poisons and toxins are among the way of life factors known to be related with epigenetic changes. For instance, nourishment is a vital ecological openness from incubation to death that impacts our wellbeing by affecting epigenetic peculiarities. In another model, later epidemiological information recommends that the expanded frequency of malignant growth seen in the created world since the 1960s may mostly be because of openness to endocrine-disturbing synthetics (EDCs), to which people and natural life are uncovered day by day from numerous sources (Pal & Tyler, 2016).

## **4.Cancer perspectives**

Cancer is the second most normal reason for death in many nations and will remain so as older individuals are generally helpless to malignant growth and the populace is quickly maturing, essentially in the west. While age-normalized malignant growth death rates are projected to diminish in the European Union (EU) and the United States (US) because of advances in screening, anticipation, and treatment, the rate has expanded in Europe and the US for testicular and prostate malignant growths in the course of the last 50 years (Malvezzi et al., 2015;

Reamon-Buettner, Mutschler, & Borlak, 2008). In the United Kingdom (UK), the joined occurrence of all malignant growths has expanded for all age bunches since the mid-1990s, with the best increment found in youngsters, matured 0–24 years. Malignant growth is a hereditary sickness portrayed by acquired or inconsistent changes in qualities that keep up with tissue homeostasis, control the cell cycle or manage apoptosis. Malignant growth is additionally an epigenetic infection portrayed by transformations in chromatin-renovating proteins and epigenome modifications coming about from distorted connection or evacuation of DNA or histone protein marks (DeSantis et al., 2014; Strohsnitter et al., 2001). Gathering proof recommends that numerous grown-up infections, including tumors, have epigenetic beginnings.

### **5.Nutritional factors effecting in Health with Epigenetics**

Nutrition is one of the most considered and better comprehended ecological epigenetic factors, also affiliations have been seen between unfriendly pre-birth nourishing conditions, post-pregnancy wellbeing, what's a more, expanded danger of sickness (Argente, Mehls, & Barrios, 2010). For example, at its limit, the Dutch Famine Birth Cohort coming about from the Dutch Famine of 1944–1945 has been utilized to concentrate on the impacts of starvation during pregnancy also, ensuring wellbeing and formative results including, yet not restricted to, expanded danger of type II diabetes mellitus, cardiovascular infection, metabolic issues, and diminished intellectual capacity in later life (Barker & Clark, 1997). The primary long periods of pregnancy appear to have the best impact on infection hazards; youngsters considered during the Dutch Famine would in general have more modest than-regular posterity, proposing the impacts as might continue, affect our youngsters and even past. It appears to be possible that the embryo epigenetically adjusts because of a restricted stockpile of supplements. In people, industrious epigenetic contrasts related with pre-birth openness to starvation have been attributed to a lower level of methylation of a quality ensnared in insulin digestion than their unexposed kin. The proof for transgenerational impacts of poor maternal eating regimen on human populaces with regard to metabolic results was inspected. There is proof from verifiable records that the grandkids of ladies presented to starvation and other dietary modifications during pregnancy are bound to encounter unexpected problems than their control partners (Knopik, Maccani, Francazio, & McGeary, 2012). The potential sub-atomic components of transgenerational legacy recommend the methylation of gametes by means of the fatherly and maternal ancestry. For sure, further transmission through the fatherly line is exceptionally

liable to happen through epigenetic regulation of the spermatozoan core. Two models from verifiable accomplices delineate this transgenerational transmission through fatherly heredity. One showed that female grandkids (F2) from the fatherly grandma (F0) who experienced helpless food accessibility during her own development was at higher danger of cardiovascular mortality. The second later model showed that grown-up amazing posterity whose fathers were presented to starvation in utero had higher BMIs than a controlled populace. The proof that both maternal and fatherly eating regimens impact metabolic aggregates in posterity in vertebrates through epigenetic data transmission is surveyed (Heijmans et al., 2008).

Over sub-atomic systems as for the fetal beginnings of the grown-up illness have been proposed counting mitochondrial brokenness and oxidative pressure as among the soonest occasions depicted in posterity presented to supplement limitation. Sustenance in early life incites long haul changes in DNA methylation that effect on person wellbeing and age-related infections all through life. Supplements can either act straight by hindering epigenetic catalysts like DNMT, HDAC, or HAT or by changing the accessibility of substrate essential for those enzymatic responses. This thus adjusts the outflow of basic qualities and effects our general wellbeing and life span. Various investigations have revealed the epigenetic impacts of diet on aggregate and helplessness to illnesses all through life. Folate digestion is connected to phenotypic changes through DNA methylation, as folate, a water-dissolvable B nutrient is a wellspring of one-carbon for the union of AdoMet, which is essential for DNA methylation. Other methyl giver supplements, for example, choline can likewise change the DNA methylation status and consequently sway quality articulation. Maternal methyl contributor supplement accessibility in early pregnancy is fundamental for the legitimate fetal turn of events, with results for wellbeing and infection defencelessness or malignant growth in the kids all through life. In one creature study, a maternal eating routine confined in methyl supplements during bias impacted DNA methylation designs in posterity and was the reason for changed aggregates. On the other hand, dietary limitation yet without serious healthful hardship has been displayed in a few models to broaden life expectancy (Aiken, Tarry-Adkins, & Ozanne, 2016; Rando & Simmons, 2015). Calorie limitation has a mitigating impact through the inhibitory impacts of basic qualities not restricted to NF- $\kappa$ B. From the epigenetic viewpoint, there is clear crosstalk between DNA methylation and histone changes, recommending that the chromatin construction may likewise decide DNA methylation. In this setting of epigenetic associations, sirtuin 1, a NAD<sup>+</sup> subordinate HDAC whose substrate explicitness incorporates

histone proteins, has been proposed to be enacted by some dietary parts (for instance resveratrol, a kind of regular phenol present in grape skins). Sirtuin 1 intercedes a portion of the impacts of dietary limitation that deferral or opposite a portion of the physiological changes related with maturing through consequences for DNA methylation. Eats less carbs high in these methyl-giving supplements can quickly affect quality articulation, particularly during early improvement when the epigenome is first settled and can have dependable impacts in grown-up life. Studies in creatures have announced that consumes less calories poor in methyl-giving folate or choline previously or soon after birth cause extremely durable hypomethylation of parts of the genome. In grown-ups, a methyl-insufficient eating regimen diminishes DNA methylation, however, the progressions are reversible when methyl is added once more into the eating regimen. Further, contingent upon the dietary enhancements got by a pregnant mouse, her posterity might have an alternate aggregate because of differential quality methylation. In a model of epigenome-adjusting synthetic compounds, bisphenol A (BPA) is generally used to fabricate variously plastic items including compartments. The puppies of grown-up mice took care of BPA were bound to have an unfortunate aggregate (yellow/fat, inclined to malignant growth and diabetes) contrasted with those brought into the world from moms who took care of BPA with enhanced methyl-rich supplements like folic corrosive and nutrient B12 (brown, slim and solid) (Kim, Friso, & Choi, 2009; Rando & Simmons, 2015). For this situation, maternal supplement supplementation balanced the adverse consequences of substance openness, highlighting the significance of a decent eating regimen wealthy in leafy foods and other great food sources. Methyl-giving supplements go about as co-substrates for methyl bunch moves; the pool of accessible methyl contributors is a significant controller of both DNA and histone methylation limit and their creation are additionally subject to BPA's epigenetic impacts (Davis & Ross, 2007). In this mouse model, changed DNA hypomethylation could be eased by folic corrosive as a dietary methyl benefactor, and also summarizes some dietary components considered to have protective effects against cancer through different epigenetic modifications in (Table 01).

**Table No 1:** A summary of dietary components for cancer mechanisms

No.	Dietary Nutrients	Role of epigenetics
1	Methionine	SAM synthesis
2	Folic acid	Methionine synthesis

3	Vitamin B-12,06	Methionine synthesis
4	Resveratrol	Removes acetyl groups from histones
5	Genistein	Methylation, cancer prevention, mechanism
6	Sulforaphane	Histone acetylation
7	Butyrate	Break down the toxic by-products

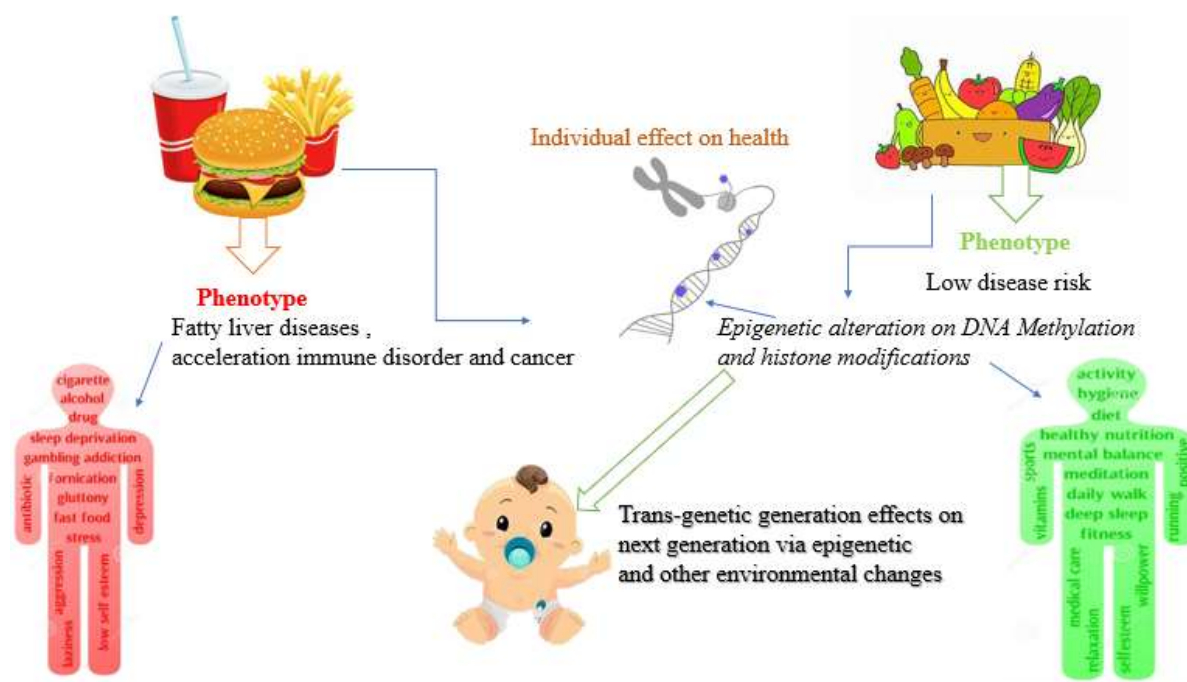
One more striking illustration of the impacts of early eating regimens on epigenetics with results on the aggregate can be found in bumblebees. The sterile working drone separates from the rich sovereign relying upon the larval eating routine through epigenetic changes in DNA methylation designs. Hatchlings assigned to become sovereigns are taken care of solely with imperial jam, which contains epigenetically dynamic fixings that quiet a key quality which itself hushes a gathering of sovereign qualities (Davis & Ross, 2007; Ford, Ions, Alatawi, & Wakeling, 2011). Moreover, DNA methylation changes happen during maturing, and it has become apparent that early life nourishment can tweak DNA methylation and impact life span, specifically by actuating long haul changes in DNA methylation and different imprints that influence defencelessness to a scope of maturing related illnesses.

### **6.Nutritional effect on epigenetic**

Folic acid and vitamin B12 are two examples of epigenetically dynamic fixings that play significant jobs in DNA digestion and the support of DNA methylation designs through the substance response of a methyl item. In one in vivo study, dietary folate admission was decidedly related with p16 growth silencer quality articulation, a basic disease-related quality with regular hushing DNA methylation of its advertiser (Alavian-Ghavanini & Rüegg, 2018; Ford et al., 2011). Changed p16 quality articulation was seen in matured mouse colons, reliable with the known decline in DNMT articulation with maturing. Low folate admission has been related to hypomethylation and an expanded danger of colorectal furthermore, pancreatic diseases. There is a developing assortment of epidemiological proof that folate tweaks anticarcinogenic properties through epigenetic changes, as folate lack decreases the potential for DNA methylation, and strange DNA methylation is related with many sorts of disease. Eats

less carbs wealthy in products of the soil containing regular enemies of oxidants can secure against disease (Bishop & Ferguson, 2015; Larsson, Giovannucci, & Wolk, 2006).

The potential epigenetic impacts of a few dietary parts notwithstanding folate, are generally determined from vegetables, have been analyzed in various investigations, which have shown decreases in DNA hypermethylation of basic qualities bringing about growth concealment. For instance, green tea contains polyphenols, which are normal mixtures broadly dispersed in plant food varieties and with numerous organic exercises including hindrance of DNA methylation. An assortment of dietary elements are potential HDAC and HAT modulators. A few, for example, sulforaphane, an isothiocyanate found in broccoli sprouts, or diallyl disulfide, an organosulfur compound in garlic, have been displayed to go about as HDAC inhibitors, a class of epigenetic helpful portrayed further beneath. Such epigenetic drugs have been utilized to treat malignant growths in clinical preliminaries because of their method of activity in re-establishing malignant growth cell separation and delivering cancers more delicate to customary treatments (Dashwood & Ho, 2007; Druesne et al., 2004). A few in vitro concentrates on utilizing these mixtures have shown hostile to cancer-causing impacts related with HDAC hindrance and histone acetylation. As indicated above, miRNAs can direct DNA methylation and histone changes, yet advertiser methylation or histone acetylation can likewise regulate miRNA articulation as a feature of a mind-boggling network with feed-forward and input circles (Fabiani, Minelli, Bertarelli, & Bacci, 2016). Dysregulated miRNA articulation is related with the improvement or movement of human malignant growths through changes in cell expansion and apoptosis, yet, methyl-and folate-inadequate eating regimens can likewise bring about abnormal miRNA articulation to apply comparably, favourable to disease impacts. Certain dietary parts might secure against disease through miRNA guideline, such as; curcumin and retinoic corrosive the previous presence in certain plants, what's more, normally utilized as a dietary enhancement and food seasoning, and the last option is present in any nutrient A-rich food (Fung et al., 2003; Jensen et al., 2018). And summarizes how diet affects the epigenome to modify individual and transgenerational phenotypes in Figure no 1.



**Figure No 01:** Diet affects the epigenome to modify individual and transgenerational phenotypes

## 7.Environmental changes in epigenetics along chemically

Environmental pollutants are among the natural or environmental variables with epigenetic impacts. Natural openings also called environmental exposures regularly considered epigenetic poisons incorporate metals, like arsenic, particulate matter from air contamination, natural mixtures, pesticides, and other endocrine-disturbing synthetic compounds address a gathering of ecological synthetic substances that meddle with chemical flagging pathways (Alavian-Ghavanini & Rüegg, 2018). Their activities on the epigenome are depicted as a model. Peoples are routinely presented to a wide scope of Endocrine-disrupting chemicals (EDCs). There is expanding proof to propose that EDC openness during early life, specifically during fetal turn of events, adds to an assortment of sicknesses, including tumors, which show further down the road or even in the following age. This recommends the epigenetic legacy of EDC-related occasions. To be sure, it is grounded that epigenetic instruments assume a focal part in these dependable impacts of EDCs. In addition, an enormous number of studies have shown that EDCs prompt epigenetic changes. Notwithstanding, the basic instruments of activity are less surely known (Knopik et al., 2012). The impacts of EDCs on epigenetics were as of late assessed. Momentarily, the impacts of EDCs can be worldwide, that is, on epigenetic catalyst articulation, i.e., DNMTs, HATs, and HDACs. For this situation, for instance, EDCs influence

DNMT by means of atomic chemical receptors like the estrogen and androgen receptors or through miRNA articulation, the last option being accompanying with other quality articulation changes. The second method of activity of EDCs is quality explicit, directing locus-explicit epigenetic designs. For instance, EDCs may explicitly influence one quality by means of atomic receptors, which have been answered to control locus-explicit chromatin states by enrolling histone modifiers and evolving DNA methylation designs by associating with DNMTs and enrolling them to explicit genomic locales (Knopik et al., 2012).

Moreover, EDCs are probably going to manage other ncRNA articulations by means of obstruction with atomic receptors, which play a putative part in the guideline of ncRNA articulation. While smoking and liquor utilization predominantly cause infection through mutagenic occasions, both can likewise apply cell impacts through epigenetics. Kids presented to pre-birth maternal smoking have epigenetic changes in buccal mucosal cells (Doherty, Grabowski, Hoffman, Ng, & Zelikoff, 2009). Maternal cigarette smoking during pregnancy has been researched regarding outcomes on wellbeing, neurodevelopment, conduct, and intellectual work in new-born children. Maternal tobacco smoking during pregnancy is related to respiratory illnesses related with safe framework dysregulation, for example, asthma and sensitivities just as malignant growth later in the existence of posterity. In another model, liquor use is a danger factor for some, diseases including oral, pharyngeal, laryngeal, oesophageal, liver, colorectal, and bosom disease, and the danger of malignant growth is portion subordinate. Liquor has injurious/unsafe consequences for development, digestion, and neuronal advancement through setting down epigenetic marks at early-stage openness, as proven by in vitro and creature studies. These unsettling influences in the epigenetic scene might add to deserts in a specific memory and learning processes just as mutations and unusual fetal turn of events. Some of our qualities, practices, sicknesses, and great and awful encounters leave epigenetic labels that might be acquired; nonetheless, they may likewise be eliminated by way of life changes. There is expanding proof that distinctive epigenetic components (DNA methylation, histone adjustments, ncRNAs) are interconnected and structure an "epigenetic network". The way of life factors and ecological openings leave epigenetic marks on our DNA that sways quality articulation; some have defensive impacts while others are unsafe. Foods grew from the ground vegetable-rich weight control plans might effectively affect DNA to epigenetic drugs. A more profound agreement of epigenetic impacts and the flagging pathways enacted by bioactive food parts would help in evaluating the job and likely advantage of



supplements on our wellbeing and decreasing disease powerlessness. Nourishing epigenetics could be joined with drugs for synergistic impacts for therapy or prophylaxis or be adjusted for a pregnant lady to diminish the weight of persistent illness in posterity through an "epigenetically sound" gestational eating routine. In both created and creating. nations, advancing maternal eating regimen is a difficult general medical issue. Various examinations have detailed that both hereditary and ecological danger factors additionally assume a part in the improvement of liquor abuse (Ducci & Goldman, 2008; Farris, Wolen, & Miles, 2010).

## **8.Conclusion**

The wellbeing of an individual relies upon the connection of numerous ecological elements with its hereditary qualities. Way of life factors is probably going to influence human wellbeing and posterity by means of epigenetic components. Varieties in quality articulation are impacted by epigenetics, which relies upon our background also, propensities include sustenance, conduct, and ecological poison openings. Constant ecological openings are believed to be incompletely answerable for the expanded paces, all things considered, not just for those straightforwardly uncovered, yet additionally for the hatchling. A few times of advancement are especially helpless to the hurtful impacts of these poisons. Also, the mix of poison, portion, and basic openness a window should be thought about yet might be hard to anticipate. Following poison openness, epigenomic changes in the posterity might influence a few organs and make the individual touchier to cancer-causing agents during youth or adulthood and increment illness defencelessness sometime down the road, including disease, diabetes, and chemical imbalance. Epigenetic marks are impacted by the climate and these progressions might be restored in resulting age, or transgenerational epigenetic legacy. Future work in the field of nourishment and epigenetics can possibly give critical advantage to general wellbeing, also, customized sustenance could turn into a piece of a patient's clinical program. The equivalent applies to ecological synthetics. Because of their unsafe impacts on people, youngsters, and perhaps across ages, the effect of synthetic compounds with epigenetic impacts has turned into a major worldwide general wellbeing worry that should be tended to. A few designated spots or key particles in the cell at the interface between the cell cycle and separation processes are probably going to be targets of synthetics that favor malignant growth advancement. Understanding the epigenetic impacts of EDCs would help in evaluating their

activity and planning such stamps could be utilized for hazard the executives dependent on pathway-based harmfulness testing.

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With the patronage of:



**quarterly publication**

**ISSN: 2724-0592    E-ISSN: 2724-1947**

**<https://pkp.odvcasarcobaleno.it/index.php/ejvcbp/>**

**Published by Casa Arcobaleno Odv**

Attività di organizzazioni per la tutela dei cittadini

Iscritta sez. Provincia di Torino Registro regionale delle Organizzazioni di Volontariato determina 150-34064 del 06/10/2014

C.F. 94570230014

Sede legale: Via Gianbattista Cacherano 14 I – Bricherasio To

Sede operativa: Casa Arcobaleno Via Lanino 3/A I – 10100 Torino To



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