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Survey on the prevalence of occupational injuries to the head and teeth in automotive repair and maintenance in Switzerland

KEYWORDS

Work-related injuries
 Traumatic dental injuries
 Automotive mechanic injuries
 Dental injuries
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SUMMARY

Automotive mechanics are exposed to an increased risk for occupational injuries (OI) to the hands, arms, head, and teeth. The aim of this study was to assess the self-reported prevalence of OIs to the head, including traumatic dental injuries (TDIs), among automotive repair and maintenance workers dealing with motorcycles, cars, and vehicles over 3.5 tons. We surveyed healthy mechanics in Swiss automotive repair workshops from 2019 to 2021. Overall, 121 automotive repair and maintenance workers responded to our 12-item questionnaire concerning their professional experience, protective measures, and occupational injuries to the head and teeth (response rate: 12%). 119 were considered eligible for inclusion and 2 were excluded. Most persons surveyed (94%) were males with more than

10 years of professional experience. 85 (72%) reported occupational injuries in general, 37 (43.5%) specified OIs to the head or tooth area, and 16 stipulated that in these cases teeth were affected. The most common self-reported diagnosis was tooth fracture ($p = 0.191$). Traumatic dental injury in childhood increased the odds ratio (OR) for occupational injury to the head or teeth by a factor of 2.4 (95% CI: 1.1, 5.5, $p = 0.036$). Age, gender, and dental trauma in childhood may also influence the prevalence of occupational injuries in general in this cohort. We conclude that occupational dental accidents in automotive repair workshops can be reduced by raising awareness of this issue and by taking effective preventive measures.

Introduction

Occupational injuries remain a major problem in many industrialized countries, and the prevention of workplace accidents is important because of their high socioeconomic impact. In 2020, the Swiss accident insurance agency reported more than 800,000 injuries to the Accident Insurance Statistics Collection Office (SSUV), including approximately 264,311 occupational injuries and illnesses (ACCIDENT INSURANCE STATISTICS UVG 2021). Occupational injuries associated with temporary or permanent disabilities and illnesses result in days away from work. This is significant because temporary or permanent incapacity to work leads to economic losses for the country and social problems for the affected employers as well as for the employees and their families (UNRAR & SUT 2009). Existing studies on the prevalence of workplace injuries show that the medical profession and the construction industry, including the automobile industry, are associated with an increased risk of occupational injuries (EMPLOYER-REPORTED WORKPLACE INJURIES AND ILLNESSES 2020). Therefore, automotive mechanics who diagnose, adjust, repair, or overhaul motor vehicles are statistically more likely to get injured on the job than the average worker (BUREAU OF LABOR STATISTICS 2019). Previous studies indicate that automotive mechanics and technicians are exposed to a variety of chemical and physical hazards, such as high noise levels and non-ergonomic working conditions (BEJAN ET AL. 2011; BLAKE ET AL. 2008; COHEN & VAN ORDEN 2008; DOTSON 2006; FREDRIKSSON ET AL. 2001; HAGBERG ET AL. 1995; SOROCK ET AL. 2004; VANDERGRIFT ET AL. 2012). Frequent contact with work-related objects and equipment, such as automotive parts, materials, and vehicles, represents a significant risk factor. Occupational injuries often occur due to equipment tipping over, falling, or collapsing, resulting in sudden major traumatic injuries as well as minor cuts and burns (BUREAU OF LABOR STATISTICS 2019). The most commonly affected body parts of mechanics are the hands, back, shoulders, eyes and knees (BUREAU OF LABOR STATISTICS 2019). Such workplace injuries can also involve maxillofacial areas, including the mouth, teeth and periodontal tissues (ZALECKIENE ET AL. 2014). The reported prevalence rates for occupational traumatic dental injuries range from 6% to 39%. Data from various studies show that one-third of adults have suffered work-related trauma to the permanent dentition (ZALECKIENE ET AL. 2014). Traumatic dental injuries often result in increased tooth mobility, crown/root fractures, dislocation, or avulsion. Moreover, occupational injuries to anterior teeth in the esthetic zone generally lead to more demanding restorative treatments associated with higher economic burdens for the affected workers and their families (KRASSTL ET AL. 2011; SOLIMAN ET AL. 2020). Although occupational orofacial injuries are common, there is a lack of scientific data on the topic of occupational health and safety in Europe and Switzerland (LÓPEZ-ARQUILLOS & RUBIO-ROMERO 2016; UGOLINI ET AL. 2018). To the best of our knowledge, there are no studies to date on work-related orofacial injuries and oral trauma in the automotive repair industry in Switzerland. Therefore, various researchers have recognized the importance of collecting data to improve our understanding and awareness of occupational injuries and the importance of worker protection in the automotive sector (GUSEVA CANU ET AL. 2020).

This study was conducted to evaluate the self-reported prevalence of occupational trauma to the head, including traumatic dental injuries, among automotive repair workers involved in the repair and maintenance of motorcycles, cars, and vehicles over 3.5 tons.

Materials and methods

Study cohort

To survey vehicle repair workers in Switzerland from 2019 to 2021, we sent a questionnaire to 1,000 randomly selected automotive repair workshops out of approximately 6331 in Switzerland. A total of 121 workers responded, yielding a response rate of 12%: 98% (n = 119) were healthy mechanics currently or previously employed in automotive repair and maintenance involving motorcycles, cars, and vehicles over 3.5 tons at the targeted repair workshops and were thus included in the study. The exclusion criteria were as follows: (1) persons who were minors, (2) persons who did not perform work/repair/maintenance on motorcycles, cars, or vehicles over 3.5 tons. All individuals included in the study participated voluntarily. The study was approved by the ethics committee of the University of Basel, Switzerland (approval number swissethics: Req-2020-00728).

Questionnaire

All 121 study participants completed the study questionnaire, which was written in German. The questionnaire was divided into 6 sections and contained a total of 12 questions. Section 1 collected demographic data (gender), Section 2 information regarding the subjects' profession, education and professional experience, Section 3 investigated protective measures, and Section 4 captured data on occupational injuries among automotive repair and maintenance workers handling motorcycles, cars, and vehicles over 3.5 tons. Section 5 involved the description and treatment of pain and Section 6 the incidence of traumatic dental injuries in childhood. The German to English translation of the questionnaire is shown in Supplementary Table 1.

Statistical analysis

Statistical analyses were performed using the Tidyverse 1.3.0 package within the R statistical programming environment, version 3.5.3 (The R Foundation; Vienna, Austria). Differences between groups were analyzed by Fisher's exact tests. The chi-squared test was used to test for association between categorical variables (e.g., sex and profession). A logistic regression model was used to predict a history of work-related injury (yes versus no) adjusted for gender and years of employment. The odds ratio (OR) was calculated along with the corresponding 95% confidence interval (CI) and p-values. The level of significance was set at $p < 0.05$ (two-sided).

Results

After screening for compliance with the inclusion criteria, a total of 119 healthy participants was enrolled in the survey. Two respondents were excluded because they did not meet inclusion criteria. The vast majority of participants (94%) were male.

Profession, education, and professional experience

According to the self-reported questionnaire data, the most common profession was automotive mechanic (n = 54, 45%), followed by automotive mechatronic technician (n = 28, 23.5%) and automotive specialist (n = 20, 16.8%). Among the 119 participants, 70 (59%) reported more than 10 years of professional experience, 32 (27%) had 4–10 years of experience, and 13 (10.9%) were in professional training. Furthermore, 112 (94%) of the surveyed individuals worked full-time and 92% were involved in car repair.

Tab.1 Questionnaire

1 Gender?	male, female
2 What is your profession/area of training?	automotive mechanic, automotive technician, car body painter, motorcycle mechanic, automotive mechatronics technician, automotive assistant, vehicle restorer, car body tinsmith, other (multiple responses possible)
3 For how long have you worked in this profession?	still in training, 0 to 3 years, 4 to 10 years, more than 10 years
4 Are you currently working in this profession?	yes, no
5 What is your percentage of employment?	10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%
6 On which vehicles do you primarily perform automotive repair/maintenance?	motorcycles, passenger cars, vehicles over 3.5 tons, other (multiple responses possible)
7 Do you generally protect your head and tooth area at work?	no, safety glasses, hearing protection, respirator, dental protection, helmet, other (multiple responses possible)
8 Have you ever injured your head/teeth on the job?	yes, no (continue with question 9)
– If so, how often?	1 to 3 times, 4 to 10 times, more than 10 times
– If so, did you require medical or dental treatment?	once, several times, no
– Was your lip injured?	yes, no
– Was a tooth affected?	yes, no (continue with question 9)
– If so, what happened to the injured tooth?	tooth discolored, loose (increased mobility), cracked, displaced, broken, knocked out, other (multiple responses possible)
9 Did you sustain any other injuries during work?	yes, no (continue with question 10)
– If so, what was injured?	head, neck, arm, hand, stomach, leg, foot, other
– Type of injury?	broken bone, bruise, laceration, burn, other
10 My worst injury was caused by (free-text entry, e.g., “a wrench”, etc.)	
11 Did you ever feel a pain or discomfort in your teeth or a sensation in your teeth or face after being struck with a work tool?	yes, no (continue with question 12)
– If so, in which area was the pain/discomfort?	upper jaw, lower jaw (multiple responses possible)
– How would you describe the pain/discomfort?	dull, sharp, pulsating, radiating (multiple responses possible)
– How long did the pain/discomfort last?	less than one hour, one hour or more, one day or more
What did you do to relieve the pain?	nothing, took pain killers, used a cold pack, consulted a doctor or dentist, other (multiple responses possible)
Did you feel any improvement after the treatment?	yes, no, the pain was only short-term
12 Did you have a traumatic dental injury as a child or young adult?	yes, no

Protective measures

105 respondents (88.2%) used protective gear such as goggles (n = 95, 90.5%), hearing protection (n = 62, 59%), breathing masks (n = 49, 47%), helmets (n = 11, 10.5%), and mouth guards (n = 2, 1.9%), while 14 (13%) worked without personal protective gear (Fig. 1). Of the persons reporting workplace accidents, 30 (28.6%) had one to three occupational injuries to the head or teeth.

Occupational injuries

Regarding the question of whether they had suffered an occupational injury in an automotive repair shop, most of the respondents answered “yes” (n = 85, 71.4%). The most commonly injured parts of the body were the hands (n = 72, 84.7%), followed by the arms (n = 27, 31.7%), feet (n = 17, 20%), and legs (n = 15, 17.6%) (Fig. 2). Moreover, the most common types of occupational injuries were lacerations (n = 51, 60%), contusions (n = 36, 42.3%), and burns (n = 32, 37.6%). 37 (31%) of 119 participants reported an occupational injury to the head or tooth region, and 19 of them required one (n = 13, 10.9%) or more (n = 8, 6.7%) medical or dental treatment center visits for these injuries. Tooth involvement was reported in 16 of 37 cases (43.2%); the most common type of occupational traumatic

dental injury was tooth fracture (11.8%; p = 0.191) (Fig. 3). Interestingly, 57 (81.4%) of the participants who reported occupational injuries in general, 26 (37.1%) who reported occupational injuries to the head or teeth, and 9 (12.9%) who reported work-related tooth fractures had more than 10 years of professional experience (Fig. 4).

Influence of traumatic dental injuries in childhood

38 participants (31.9%) had traumatic dental injuries in childhood. Childhood traumatic dental injury increased the odds of occupational injury to the head or teeth by a factor of 2.4 (n = 17, 95% CI: 1.1, 5.5, p = 0.036) (Fig. 5). Furthermore, traumatic dental injuries during childhood increased the odds ratio for occupational injury in general by a factor of 1.5 (n = 33, 95% CI: 0.4, 6.1, p = 0.54) in automotive repair and maintenance workers.

Discussion

Worldwide, approximately 270 million work-related injuries occur annually, resulting in a loss of 3.5 healthy life years per 1,000 workers (BARLING ET AL. 2004; CONCHA-BARRIENTOS ET AL. 2005). Several studies indicate that automobile repair work is a perilous occupation with an increased injury prevalence (BEJAN

Fig. 1 Number and type of protective gear used by the 105 automotive repair workers who responded to this question; multiple responses were possible.

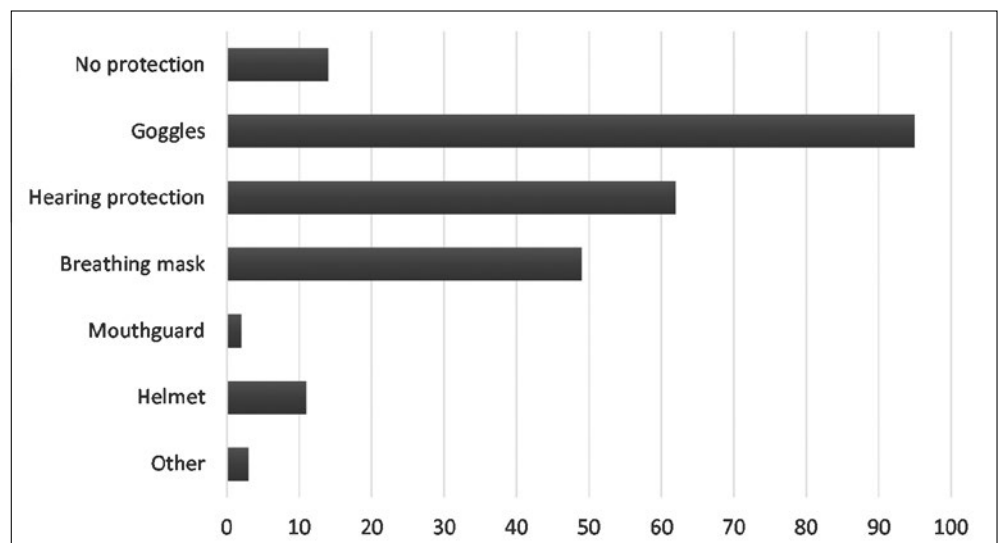


Fig. 2 Number and site of occupational injuries in the surveyed automotive repair workers (n = 85); multiple responses were possible.

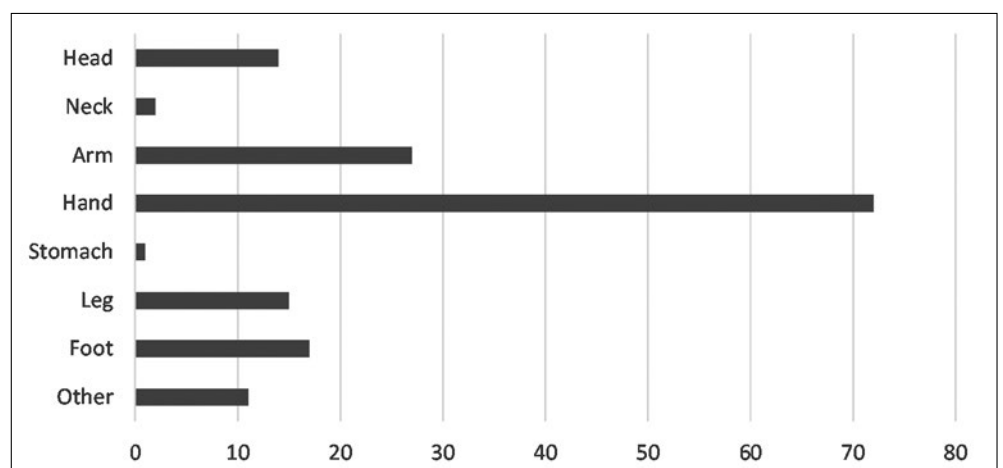
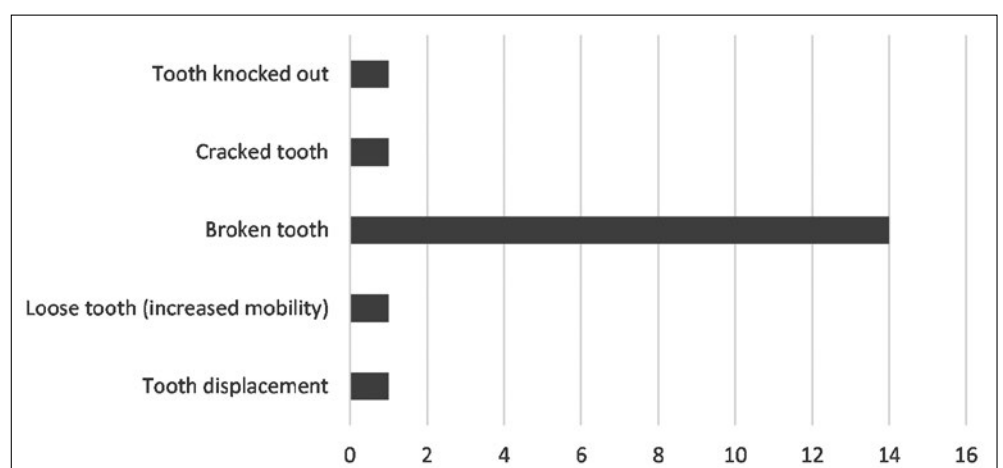


Fig. 3 Number and type of traumatic dental injuries in the surveyed automotive repair workers (n = 16); multiple responses were possible.



ET AL. 2011; BLAKE ET AL. 2008; COHEN ET AL. 2008; DOTSON 2006; SOROCK ET AL. 2004; VANDERGRIFT ET AL. 2012). Although traumatic dental injuries are common among individuals with multiple occupational injuries, there are no studies to date on the prevalence of work-related traumatic dental injuries in automotive repair shops in Switzerland (EILERT-PETERSSON ET AL. 1997). Therefore, the current study aimed to identify factors associated with occupational injuries and dental trauma in the automotive repair industry in Switzerland. Furthermore, we analyzed the

data to identify effective protective measures for automotive mechanics and technicians.

Most participants in our survey (n = 85, 72%) had a history of occupational injury. The incidence rate observed here is in accordance with that of Vyas et al., who found occupational injuries in 63% of mechanics in automotive repair workshops (VYAS ET AL. 2011). Additional studies indicate that automotive mechanics have an increased prevalence of injuries to the hands and upper extremities (BUREAU OF LABOR STATISTICS 2021; VYAS ET

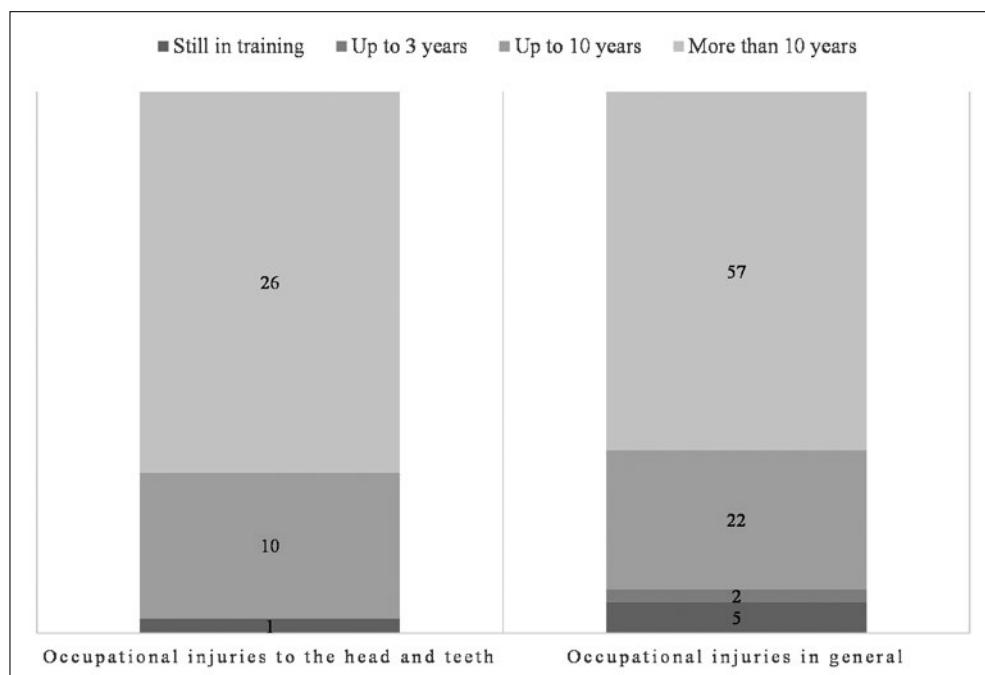


Fig. 4 Total number of years of work experience vs number of occupational injuries in general in the surveyed automotive repair workers (n = 119).

AL. 2011). Similarly, our survey revealed that the most commonly affected parts of the body were the hands, followed by the arms, feet, and legs, and that 37 of 85 participants (43.5%) had sustained occupational injuries to the head or tooth region.

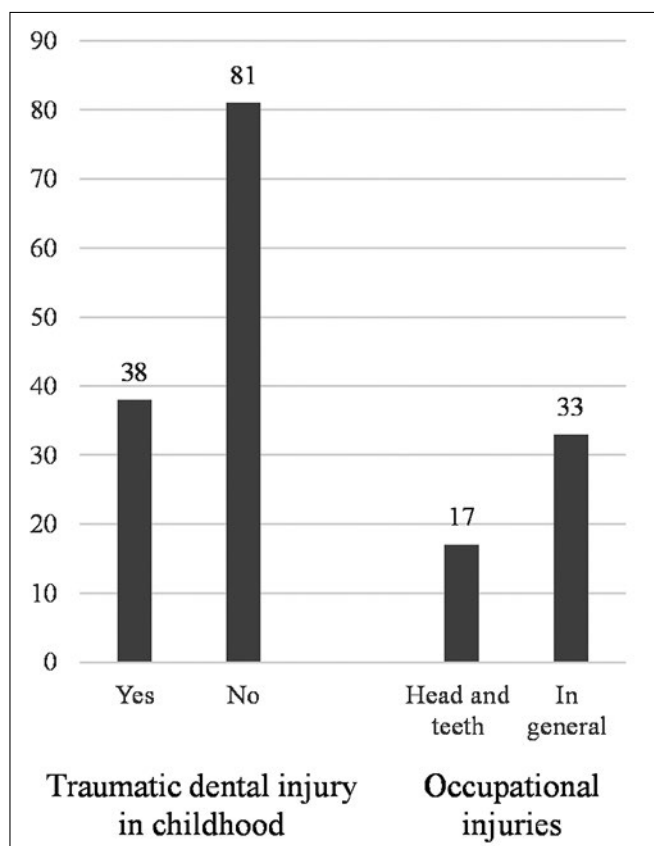


Fig. 5 Effect of traumatic dental injury in childhood on “occupational injuries to the head/teeth” and “occupational injuries in general” among the surveyed automotive repair workers. Childhood traumatic dental injury increased the odds ratio for occupational injury to the head or teeth by a factor of 2.4 (n = 38, 95% CI: 1.1, 5.5, p = 0.036).

Traumatic dental injuries including lateral luxation, intrusion, and avulsion can lead to long-term tooth loss due to periodontal damage arising from either replacement resorption or infection-related root resorption (HERSBERGER ET AL. 2012; PERSIC ET AL. 2006). Furthermore, dental trauma is frequently associated with complex dental restorative treatments (e.g., tooth replacement or prosthetic rehabilitation), resulting in an increased economic burden (REICHARDT ET AL. 2021; UGOLINI ET AL. 2018).

Several investigators reported a different prevalence range for occupational traumatic dental injuries (ZALECKIENE ET AL. 2014). The epidemiological study by Ugolini et al. indicated a low prevalence of 5.6 per 1,000 work-related traumatic dental injuries (UGOLINI ET AL. 2018). Remarkably, the total number of those occupational injuries was statistically comparable with that in construction, farm, and factory workers. Our survey revealed a high prevalence of dental traumatic injuries in automotive repair workers: 13.4% out of 119 participants. This figure is elevated compared to that of the aforementioned study (UGOLINI ET AL. 2018). Furthermore, in the study by Ugolini et al., the highest prevalence of work-related traumatic dental injuries occurred in the fourth and fifth decade of life and in males compared to females. We were unable to confirm the latter finding due to the preponderance of males in the present survey. Most of our participants with occupational injuries to the head or teeth, including tooth fractures, had more than 10 years of professional experience. This finding is consistent with that of Hansen et al., who detected an association between years of work experience and occupational injuries in aging male construction workers in Denmark and concluded that physical work demands are a significant risk factor for occupational injuries (HANSEN ET AL. 2022). Baidwan et al. found that aging workers who perceived their workplaces to be high in psychological and physical work demands and efforts had a nearly two times greater risk for occupational injuries than those who did not (BAIDWAN ET AL. 2019). Hence, it can be assumed that the risk of occupational injury increases with age and work experience in occupations with high phys-

ical work demands, such as automotive repair and maintenance.

The results of our survey showed that traumatic dental injuries during childhood increased the odds of automotive repair workers having an occupational injury in general by a factor of 1.5 ($p = 0.544$) and increased their odds of occupational injury to the head or teeth 2.4-fold (95% CI: 1.1, 5.5, $p = 0.036$) (Fig. 5). In agreement with these findings, Filippi & Krastl observed that the leisure behavior of children and adolescents has become more aggressive and risk-taking than in the past (FILIPPI & KRSTL 2007). There is an annual increase in traumatic dental injuries, including those associated with “trendy” sports equipment, such as inline skates, kickboards, and water slides in swimming pools. Moreover, epidemiological studies have shown that traumatic dental injuries occur in about 55 out of every 100 children in Europe and the USA before they reach the age of 16 (BORSSÉN & HOLM 2000; KASTE ET AL. 1996). The most common types of trauma to the teeth were dislocation in the primary dentition and crown fracture in the permanent dentition (FILIPPI & KRSTL 2007). Various studies have shown that age, gender, and traumatic dental injuries in childhood may also influence the prevalence of work-related dental trauma (ROCCIA ET AL. 2013; TRULLÁS ET AL. 2013; UGOLINI ET AL. 2018). The results of our survey of Swiss automotive repair workers highlighted the need for even more effective safety strategies for certain parts of the body. These findings coincide with the results of the American Bureau of Labor Statistics, which indicate that the head, especially the eye region, is one of the most commonly affected parts of the body (BUREAU OF LABOR STATISTICS 2019). In our study sample, the predominant use of eye, hearing and breathing protection is probably why no occupational injuries were reported in those sensitive parts of the body. On the other hand, the lack of protection of the face, head, and teeth increased the odds of having occupational injuries, including dental trauma. According to Ugolini et al., the upper jaw and upper incisors are the most commonly involved sites of occupational injuries involving the head and teeth (UGOLINI ET AL. 2018). Accidental tooth loss (knock out) occurred in one automotive mechanic included in the present survey. Moreover, tooth fractures were the most common type of workplace dental trauma reported in the present study (14 out of 16 participants). This rate is similar to that in the Italian study (UGOLINI ET AL. 2018).

Besides dental fractures of different types, pain can also be an effect of traumatic dental injuries. The results of our survey indicated that among the 16 participants with dental injuries the majority reported a dull, pulsating pain that lasted for more than one hour. Most of these cases required a dental or medical treatment center visit. Hence, protective measures are important in professional fields like the automotive industry. In view of the different hazards in their workplace, automotive mechanics can most effectively protect themselves against traumatic dental injuries by wearing a mouth guard. Additionally, they should be informed about the use of a tooth rescue box in the rescue chain for avulsed teeth (BRUNNER ET AL. 2009; KIRSCHNER ET AL. 2005; MÜLLER ET AL. 2008). The results of the present study indicate that Switzerland has reached a higher standard of protective equipment for automobile workers compared to other countries (VYAS ET AL. 2011). However, mechanics and technicians should be trained about special protective tools even more frequently. The wearing of mouth guards or helmets to prevent injuries to the head and face area is crucial as these

parts of the body are more frequently affected by occupational injuries than others (BRUNNER ET AL. 2009; KIRSCHNER ET AL. 2005; MÜLLER ET AL. 2008). Hence, it is important to customize, adapt, and implement occupational safety information and disease prevention programs to improve the health status of automobile repair workers according to the individual needs of the specific local conditions. Moreover, because well-designed studies on this topic are lacking, additional research is needed to reduce the number of work-related injuries in this occupational field.

Limitations of this study

One limitation of this study is that the prevalence of occupational injuries was calculated based on employee self-reported data rather than medical or administrative data sets. A further limitation has to do with the small size of the study sample.

Conclusion

Several studies indicate that automotive repair work is a perilous occupation with an increased risk for work-related injuries. Additionally, it is reported that automotive mechanics have a high prevalence of injuries to hands, arms, and head, including the teeth. The results of the present survey documented the predominant use of eye, hearing, and breathing protection in Switzerland and, accordingly, the study participants reported no injuries in those sensitive parts of the body. On the other hand, the use of additional protective gear, such as mouth guards or helmets, could have prevented traumatic injuries to the head and tooth region but, apparently, many of the respondents failed to do so. Accordingly, the surveyed automotive mechanics reported a high prevalence of injuries to the hands, extremities, head, and teeth, including traumatic dental injuries. The most common type of dental trauma reported in this survey was tooth fracture. The present survey also indicates that age, gender, and traumatic dental injuries accidents in childhood may also influence the prevalence of occupational injuries. The results of this questionnaire survey highlight the need for more protective gear, especially for the head and teeth, in the automotive industry and similar fields. Moreover, information campaigns to improve the health status of automobile repair workers are another important issue.

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Conflict of interest

The authors declare that they have no conflict of interest.

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Zusammenfassung

Einleitung

Arbeitsunfälle sind eines der grössten Probleme in vielen Industrieländern und ihre Prävention ist von grosser sozioökonomischer Bedeutung. Berufsbedingte Unfälle können verschiedene Körperregionen wie das Gesicht oder den Kiefer betreffen. Dabei sind auch Verletzungen des Mundes, insbesondere der Zähne und des parodontalen Gewebes, möglich. Die Prävalenz von berufsbedingten traumatischen Zahnverletzungen liegt zwischen 6 und 39%. Verschiedene Studien zeigen, dass ein Drittel der Erwachsenen ein arbeitsbedingtes Trauma des bleibenden

Gebisses erlitten hat (ZALECKIENE ET AL. 2014). Traumatische Zahnverletzungen führen häufig zu erhöhter Mobilität, Kronen-/Wurzelfrakturen, Dislokation oder Avulsion des betroffenen Zahns. Die Versorgung des ästhetisch anspruchsvollen Frontzahnbereiches hat dabei vielfach eine komplexe restaurative Behandlung mit erhöhten Kosten für Patienten und ihre Familien zur Folge (KRASSTL ET AL. 2011; SOLIMAN ET AL. 2020). Obwohl berufsbedingte orofaziale Verletzungen häufig sind, mangelt es in Europa und der Schweiz an wissenschaftlichen Publikationen zu diesem Themengebiet (LÓPEZ-ARQUILLOS & RUBIO-ROMERO 2016; UGOLINI ET AL. 2018). Arbeitsbedingte orofaziale Verletzungen und orale Traumata in Autowerkstätten wurden bisher in der Schweiz noch nicht untersucht. Dabei ist die Erfassung von Arbeitsunfällen im Automobilsektor wichtig, um den Schutz der Beschäftigten zu verbessern (GUSEVA CANU ET AL. 2020).

Die folgende Studie wurde durchgeführt, um die Prävalenz von Unfällen im Zusammenhang mit dem Kopf, einschliesslich Zahnverletzungen bei der Arbeit, Reparatur und Wartung von Motorrädern, Autos und Fahrzeugen über 3,5 Tonnen, in Kfz-Werkstätten zu bewerten.

Methoden

Die Untersuchung wurde bei Mitarbeitern von Kfz-Reparaturwerkstätten von 2019 bis 2021 in der Schweiz durchgeführt. Die 121 Studienteilnehmer beantworteten einen Fragebogen bestehend aus 6 Unterkapiteln mit 12 Fragen zu Beruf, Schutzmassnahmen und berufsbedingten bzw. zahnmedizinischen Verletzungen.

Ergebnisse

119 gesunde Teilnehmer wurden in die Studie eingeschlossen, während zwei Personen die Kriterien für die Aufnahme nicht erfüllten. Die Mehrheit, 94% der Studienteilnehmer, ist männlich und hat mehr als 10 Jahre Berufserfahrung. 85 (72%) der befragten Personen berichteten über Arbeitsunfälle, 37 (43,5%) von ihnen erlitten Unfälle im Kopfbereich. Bei 16 dieser Fälle waren die Zähne betroffen, die häufigste selbst angegebene Diagnose war eine Zahnfraktur (abgebrochener Zahn) ($p = 0,191$). Es bestand ein Zusammenhang zwischen einem traumatischen dentalen Ereignis in der Kindheit und einem späteren Arbeitsunfall, der den Kopf oder die Zähne betraf (Faktor 2,4; 95% CI: 1,1, 5,5, $p = 0,036$).

Schlussfolgerungen

Autoreparaturarbeiten gehören zu den Tätigkeiten mit einem erhöhten Risiko für arbeitsbedingte Verletzungen an Händen, Armen und Kopf bzw. Zähnen. Bei den befragten Teilnehmern dieser Studie war die häufigste Art der berichteten traumatischen Zahnverletzungen die Zahnfraktur. Alter, Geschlecht und frühere Unfälle in der Kindheit bzw. im jungen Erwachsenenalter scheinen einen Einfluss auf die Prävalenz von Verletzungen zu haben. Die Zahl der Arbeitsunfälle in Kfz-Reparaturwerkstätten kann verringert werden, wenn diesem Thema mehr Bedeutung beigemessen wird und wirksame Präventionsmassnahmen ergriffen werden.

Résumé

Introduction

Les accidents du travail restent un des problèmes les plus importants dans de nombreux pays industrialisés et leur prévention revêt une grande importance socio-économique. Les acci-

dents du travail peuvent également affecter la région buccale et maxillo-faciale, y compris les lésions de la bouche, en particulier des dents et des tissus parodontaux. La prévalence des lésions dentaires traumatiques d'origine professionnelle se situe entre 6 et 39%. En outre, les données des différentes études montrent qu'un tiers des adultes ont subi un traumatisme de la dentition permanente lié au travail (ZALECKIENE ET AL. 2014). Les lésions dentaires traumatiques entraînent souvent une mobilité accrue, des fractures coronaires/radiculaires, une dislocation ou une avulsion de la dent concernée. En plus, la zone antérieure, hautement esthétique, entraîne un traitement restaurateur complexe avec des coûts économiques accrus pour les patients et leurs familles (KRASSTL ET AL. 2011; SOLIMAN ET AL. 2020). Bien que les lésions oro-faciales d'origine professionnelle soient fréquentes, l'Europe et la Suisse manquent de publications scientifiques sur le sujet (LÓPEZ-ARQUILLOS & RUBIO-ROMERO 2016; UGOLINI ET AL. 2018). À notre connaissance, il n'existe pas encore en Suisse d'études sur les blessures oro-faciales liées au travail et les traumatismes oraux dans les garages automobiles. Il est donc important de collecter des données afin d'améliorer la détection des accidents du travail dans le secteur automobile et la protection des travailleurs (GUSEVA CANU ET AL. 2020).

L'étude a été menée afin d'évaluer la prévalence des accidents liés à la tête, y compris les traumatismes dentaires au travail, lors de la réparation et l'entretien des motos, des voitures et des véhicules de plus de 3,5 tonnes dans les ateliers de réparation automobile.

Méthodes

L'étude a été menée parmi les travailleurs en bonne santé des ateliers de réparation automobile de 2019 à 2021 en Suisse. Les 121 personnes participant à l'étude ont répondu à un questionnaire comportant six sous-sections avec douze questions concernant la profession, les mesures de protection et les lésions professionnelles resp. dentaires.

Résultats

119 participants en bonne santé ont été inscrits à l'étude, tandis que deux personnes ne répondaient pas aux critères d'inclusion. La majorité, 94%, était des hommes avec plus de dix ans d'expérience professionnelle. 85 (72%) individus ont rapporté des accidents du travail, parmi lesquels 37 (43,5%) ont été impliqués dans des accidents de la tête ou des dents. Dans seize de ces cas, les dents étaient touchées, le diagnostic le plus fréquemment déclaré étant une fracture dentaire (dent cassée) ($p = 0,191$). Il existe une corrélation entre un événement traumatique survenu dans l'enfance et un accident professionnel ultérieur affectant la tête ou les dents (facteur 2,4; 95% CI: 1,1, 5,5, $p = 0,036$).

Conclusions

Le travail de réparation automobile est une profession périlleuse avec un risque accru de blessures professionnelles aux mains, aux bras et à la tête resp. aux dents. Parmi les participants, le type le plus courant de blessures traumatiques dentaires auto-déclarées était la fracture dentaire. En outre, l'âge, le sexe et les accidents antérieurs dans l'enfance ou chez les jeunes adultes peuvent également avoir une influence sur la prévalence des blessures. Par conséquent, les accidents du travail dans les ateliers de réparation automobile peuvent être réduits si l'on accorde de l'importance à cette question et si l'on prend des mesures préventives efficaces.

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